

Digitized by the Internet Archive
in 2017 with funding from
University of Toronto





ENGINEERING BUILDINGS.



CHEMISTRY AND MINING BUILDING.



CALENDAR

OF THE

Ontario School of Practical Science

(Affiliated to the University of Toronto)

Faculty of Applied Science and Engineering of the
University of Toronto



Printed by order of the Legislative Assembly of the Province of Ontario.

Twenty-Eighth Session, 1905-1906
TORONTO

WAR

CONTENTS.

	PAGE
CALENDAR	5
TIME TABLES	8
FACULTY.. .. .	14
GENERAL DESCRIPTION	17
DEPARTMENTS	19
DIPLOMA	20
ADMISSION	21
FEES, DEPOSITS, ETC.	22
ESTIMATED EXPENSES OF A REGULAR COURSE	22
LODGING AND BOARD	23
FELLOWSHIPS	23
REGULATIONS	24
VACATION WORK	25
SUPPLEMENTAL EXAMINATIONS	26
EXEMPTIONS	26
PRIZES AND HONOURS	27
REGULAR EXAMINATIONS	28
DEPARTMENT OF CIVIL ENGINEERING	31
" MINING ENGINEERING	34
" MECHANICAL AND ELECTRICAL ENGINEERING	38
" ARCHITECTURE	41
" ANALYTICAL AND APPLIED CHEMISTRY	45
" CHEMICAL ENGINEERING.. .. .	47
FOURTH OR POST GRADUATE YEAR	50
DEGREE OF B.A.SC.	52
PROFESSIONAL DEGREES	54
ACTS RESPECTING DOMINION AND ONTARIO LAND SURVEYORS	57
ONTARIO ARCHITECTS' ACT	59
SYNOPSIS OF COURSES OF LECTURES	60
THERMODYNAMIC LABORATORY	75
HYDRAULIC "	76
STRENGTH OF MATERIALS LABORATORY	77
CEMENT TESTING LABORATORY	77
METROLOGICAL "	78
ELECTRICAL "	78

CONTENTS.—*Continued.*

	PAGE
MINERALOGICAL LABORATORY	80
ASSAYING "	81
MILL ROOM "	81
PHYSICAL "	82
CHEMICAL "	83
MUSEUMS	83
LIBRARY	84
ENGINEERING SOCIETY	85
ATHLETIC CLUBS	86
THE TORONTO ENGINEER COMPANY	88
GYMNASIUM.. .. .	89
STUDENTS IN ATTENDANCE	91
PRIZEMEN	105
GRADUATES IN APPLIED SCIENCE	108
" CIVIL ENGINEERING	110
" MINING ENGINEERING	110
" MECHANICAL ENGINEERING	110
" ELECTRICAL ENGINEERING	110
GRADUATES OF SCHOOL OF PRACTICAL SCIENCE	111
CERTIFICATES	137
INDEX TO GRADUATES	138

CALENDAR 1905-1906.

1905.	Sept.	25	Meeting of Council.
		26	Supplemental Examinations begin.
		29	Registration of Students.
	Oct.	2	First term begins. Lectures and practical work begin. Last day for presentation of Vacation Work.
		11	Meeting of Engineering Society.
		13	Meeting of Council.
	Nov.	25	Meeting of Engineering Society.
		8	Meeting of Engineering Society.
		10	Meeting of Council.
	Dec.	22	Meeting of Engineering Society.
6		Meeting of Engineering Society.	
8		Meeting of Council.	
1906.	Jan.	21	First term ends.
		4	Second term begins.
		12	Meeting of Council.
	Feb.	17	Meeting of Engineering Society.
		31	Meeting of Engineering Society.
		9	Meeting of Council.
	March	14	Meeting of Engineering Society.
		28	Ash Wednesday—building closed.
		9	Meeting of Council.
	April	14	Meeting of Engineering Society.
28		Meeting of Engineering Society.	
30		Annual Meeting of Engineering Society.	
May	31	Last day for presentation of thesis for B.A.Sc.	
	6	Meeting of Council.	
	7	Lectures and practical work close.	
June	13	Good Friday—building closed.	
	14	Annual Examinations begin.	
	16	Examinations for B.A.Sc. begin.	

The building will be closed on all public holidays, and daily at noon during July and August.

SEPTEMBER

OCTOBER

SUN.	MON.	TUE.	WED.	THU.	FRI.	SAT.
..	..	..	..	..	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
..

NOVEMBER

DECEMBER

SUN.	MON.	TUE.	WED.	THU.	FRI.	SAT.	SUN.	MON.	TUE.	WED.	THU.	FRI.	SAT.
..	..	..	1	2	3	4	..	..	..	..	..	1	2
5	6	7	8	9	10	11	3	4	5	6	7	8	9
12	13	14	15	16	17	18	10	11	12	13	14	15	16
19	20	21	22	23	24	25	17	18	19	20	21	22	23
26	27	28	29	30	..	..	24	25	26	27	28	29	30
..	..	..	..	..	..	..	31	..	..	..	..	..	..

JANUARY

FEBRUARY

[illegible]

1906

MARCH

SUN.	MON.	TUE.	WED.	THU.	FRI.	SAT.
..	..	..	..	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31
..

APRIL

SUN.	MON.	TUE.	WED.	THU.	FRI.	SAT.
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	..	..	..	..	..
..

MAY

SUN.	MON.	TUE.	WED.	THU.	FRI.	SAT.
..	..	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	..	..
..

JUNE

SUN.	MON.	TUE.	WED.	THU.	FRI.	SAT.
..	..	..	..	..	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
..

JULY

SUN.	MON.	TUE.	WED.	THU.	FRI.	SAT.
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	..	..	..	..
..

AUGUST

SUN.	MON.	TUE.	WED.	THU.	FRI.	SAT.
..	..	..	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	..
..

TIME TABLE—FIRST YEAR

SESSION 1905-1906

	MONDAY.	TUESDAY.	WEDNESDAY.	THURSDAY.	FRIDAY.	
9-10	*Analytical Geometry, 1, 2, 3, 4, 6 Drawing 5	*Trigonometry	*Algebra	*Euclid	*Trigonometry	9-10
10-11	*Mineralogy 1, 2, 4, 5, 6 Drawing 3	Pen and Ink 4 Drawing 1, 2, 3, 5, 6	Drawing 1, 2, 3, 4, 6	Descriptive Geometry Drawing 3, 6 1, 2, 4	Surveying 3, 6 Orders of Arch'te 4 Drawing 1, 2	10-11
11-12	Statics 3, 6 Dynamics 1, 2, 4 Drawing 5	Statics 1, 2, 4 Dynamics 3, 6 Drawing 5	Drawing 1, 2, 3, 4, 6	Statics Dynamics 3, 6 1, 2, 4	Statics 1, 2, 4 Dynamics 3, 6	11-12
12-1	Electricity 3, 5, 6 Surveying 1, 2, 4	Chemistry	Drawing 1, 2, 3, 4, 6	Electricity Descriptive Geometry 3, 5, 6 1, 2, 4	Chemistry	12-1

TIME TABLE

9

2-3	*Mineralogical Lab. 1 (b) Drawing 2, 3, 4, 6 Drawing 1 (a)	Field Work 1, 2, 4 (a) Chem'l Lab. 1, 2, 4 (b) Electrical Lab. 3, 5, 6 (a) Drawing 3, 6 (b)	Drawing 1, 2, 3, 4, 6	Field Work 1, 2, 4 (a) Chem'l Lab. 3, 6 (b) Drawing 3, 6 (a) 1, 2, 4 (b)	Field Work 1, 2, 4 (a) Drawing 3, 6 Drawing 1, 2, 4 (b)	2-3
3-4	*Mineralogical Lab. 2 (b) Drawing 1, 3, 4, 6 Drawing 2 (a)	Field Work 1, 2, 4 (a) Chem'l Lab. 1, 2, 4 (b) Electrical Lab. 3, 5, 6 (a) Drawing 3, 6 (b)	Drawing 1, 2, 3, 4, 6	Field Work 1, 2, 4 (a) Chem'l Lab. 3, 6 (b) Drawing 3, 6 (a) 1, 2, 4 (b)	Field Work 1, 2, 4 (a) Drawing 3, 6 Drawing 1, 2, 4 (b)	3-4
4-5	*Mineralogical Lab. 4, 5, 6 (b) Drawing 1, 2, 3 Drawing 4, 5 (a)	Field Work 1, 2, 4 (a) Electrical Lab. Chem'l Lab. 1, 2, 4 (b) 3, 5, 6 (a) Drawing 3, 6 (b)	Drawing 1, 2, 3, 4, 6	Field Work 1, 2, 4 (a) Chem'l Lab. 3, 6 (b) Drawing 3, 6 (a) 1, 2, 4 (b)	Field Work 1, 2, 4 (a) Drawing 3, 6 Drawing 1, 2, 4 (b)	4-5

1. Civil Engineering ; 2. Mining Engineering ; 3. Mechanical and Electrical Engineering ; 4. Architecture ; 5. Analytical and Applied Chemistry , 6. Chemical Engineering. *University of Toronto ; (a) First Term, (b) Second Term. Subjects not numbered are common to all the departments. In the department of Analytical and Applied Chemistry all hours not otherwise allotted are to be spent in the laboratories.

Saturdays from 9-12 will be devoted to field work during the months of October and November, and to drawing during the remainder of the Session.

TIME TABLE—SECOND YEAR

SESSION 1905-1906

	MONDAY	TUESDAY.	WEDNESDAY	THURSDAY	FRIDAY	
2-10	Electricity 3, 5, 6 Dynamics 1, 2 Orders of Arch ^c 4	Surveying 1, 2, 4 Dynamics 3, 6 Organic Chemistry 5	*Calculus 1, 2, 3, 4, 6 German 5	*Astronomy 1 *Lithology 2, 4 Electricity 3, 5, 6	*Calculus 1, 2, 3, 4, 6 Organic Chemistry 5	9-10
10-11	Applied Chemistry	Optics 1, 2, 4 (a) Hydrostatics 1, 2, 4 (b) Descriptive Geometry 3, 6	Chemical Lab. 1, 2, 3, 4 Drawing 6	Applied Chemistry	Optics 3, 5, 6 (a) Hydrostatics 3, 5, 6 (b) Drawing 1, 2, 4	10-11
11-12	Spherical Trig'y 1, 2, 3 (a) *Physical Chem. 5, 6 Drawing 4 Drawing 1, 2, 3 (b)	Drawing	Chemical Lab. 1, 2, 3, 4 Drawing 6	Geology 1, 2, 5 Metallurgy 3, 6 Drawing 4	*Physical Chemistry 5, 6 Drawing 1, 2, 3, 4	11-12
12-1	Strength of Materials 1, 2, 4 Theory of Mechanism 3, 6 German 5	Strength of Materials 3, 6 Descriptive Geometry 1, 2, 4	Strength of Materials 1, 2, 4 Theory of Mechanism 3, 6	Metallurgy 1, 2, 4, 5 Drawing 3, 6	Strength of Materials 3, 6 Drawing 1, 2, 4	12-1

TIME TABLE.

11

2-3	Physical Lab. Chemical Lab. Electrical Lab. Drawing History of Arch'te.	1 2 (a) 3, 5, 6 2 (b) 4	Field Work 1, 2, 4 (a) Physical Lab. Chemical Lab. Chemical Lab. *Mineralogical Lab.	4 2 6 1, 3	History of Ornament Physical Lab. Chemical Lab. Drawing	Field Work 1, 2, 4 (a) Chemical Lab. 3, 6 (b) *Mineralogical Lab. Drawing Drawing	2-3 Field Work 1, 2, 4 (a) Physical Lab. 5, 6 Chemical Lab. 2 (b) Drawing 1, 4 (b) Drawing 3
3-4	Physical Lab. Chemical Lab. Electrical Lab. Drawing	1, 4 2 (a) 3, 5, 6 2 (b)	Field Work 1, 2, 4 (a) Physical Lab. Chemical Lab. Chemical Lab. *Mineralogical Lab.	2 6 1, 3, 4 6	Physical Lab. Chemical Lab. Drawing	Field Work 1, 2, 4 (a) Chemical Lab. 3, 6 (b) *Mineralogical Lab. Drawing Drawing	3-4 Field Work 1, 2, 4 (a) Physical Lab. 5, 6 Chemical Lab. 2 (b) Drawing 3 Drawing .. 1, 4 (b)
4-5	Physical Lab. Chemical Lab. Electrical Lab. Drawing	1, 4 2 (a) 3, 5, 6 2 (b)	Field Work 1, 2, 4 (a) Physical Lab. Chemical Lab. Chemical Lab. *Mineralogical Lab.	2 6 1, 3, 4 6	Physical Lab. Chemical Lab. Drawing	Field Work 1, 2, 4 (a) Chemical Lab. 3, 6 (b) *Mineralogical Lab. Drawing Drawing	4-5 Field Work 1, 2, 4 (a) Physical Lab. 5, 6 Chemical Lab. 2 (b) Drawing 3 Drawing 1, 4 (b)

1. Civil Engineering ; 2. Mining Engineering ; 3. Mechanical and Electrical Engineering ; 4. Architecture ; 5. Analytical and Applied Chemistry. 6. Chemical Engineering. *University of Toronto. (a) First Term. (b) Second Term. Subjects not numbered are common to all the departments. In the department of Analytical and Applied Chemistry all hours not otherwise allotted are to be spent in the laboratories.

Saturdays from 9-12 will be devoted to field work during the months of October and November and to drawing during the remainder of the Session.

TIME TABLE—THIRD YEAR.

12

SESSION 1905-1906.

THIRD YEAR.

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	
9-10 Hydraulics, 1, 2, 3, 3', 4, 6 *Biology, 5	Thermodynamics, 1, 2, 3, 3', 6 History of Arch'tc., 4	Comp'd Stress, 1 (a) Least Sqs., 1 (b) Acoustics, 4 2, 3', 6 Drawing, 3 (b)	Hydraulics, 1, 2, 3', 4, 6	Thermodynamics, 1, 2, 3, 3', 6 Arch't. Design, 4 *Biology, 5	9-10
10-11 Electricity, 3, 3', (a) Alt'g. Current, 3, 3', (b) Metallurgy, 2, 5, 6 Principles of Dec'h., 4 Drawing, 1	The'y. of Const't., 1, 4, do 2, 3, 6 (a) *Organic Chem., 5 Chemical Lab., 2 (b) Drawing, 3' 3, 6 (b) Drawing, 3, 6 (b)	Des. Geom., 1, 2, 4 (a) Electrochem., 3', 5, 6 Heat Engines, 3 (a) Assaying, 2 (b) Drawing, 1, 3, 4 (b)	Electricity, 3, 3' (a) Alt'g. Current, 3, 3' (b) German, 6 Chemical Lab., 2 Drawing, 1, 4	The'y of Const'n., 1, 4 do 2, 3, 6 (a) *Crystallography, 3' Drawing, 3, 6 (b)	10-11
11-1 Machine Design, 3', 6 Ore Deposits, 1, 4 Drawing,	Mech. of Mach., 3, 3, 6 Ast'y. and Geodesy, 1 Chemical Lab., 2 (b) Drawing, 4 Drawing, 2 (a)	Surveying, 1, 2, 4 (a) Assaying, 2 (b) Drawing, 3, 3', 6 Drawing, 1, 4 (b)	Machine Design, 3', 6 Chemical Lab., 3' Drawing, 1, 4	Min'g & Ore Dress'g., 2 Mech. of Mach., 3, 3', 6 (a) Ast'y. & Geodesy, 3', 1 Drawing, 4 Drawing, 3, 3', 6 (b)	11-12
12-1 Applied Chemistry	Electricity, 3, 3', 6 (a) Electrical Design, 1, 2, 5 Geology, 2, 5 Drawing, 4 Drawing, 3, 6 (b)	Electricity, 1, 2, 4, 5 Mill Design, 3 Drawing, 3' (a) Drawing, 3', 6 (b)	Applied Chemistry	Electricity, 3, 3', 6 (a) Electrical Design, 3' (b) Geology, 1, 2, 5 Drawing, 4 Drawing, 3, 6 (b)	12-1

1-3	Plumbing, etc., Physical Lab. Chemical Lab. *Mineral Lab. Drawing, Drawing,	4 1 (a) 6 2, 5 3, 3' 1 (b)	Field Work, Electrical Lab. Drawing, Drawing,	1, 2, 4 (a) 3, 6' 1, 2, 3' 4 (b)	Assaying, Physical Lab. Chemical Lab. Electrical Lab. Drawing,	2 2, 4 6 3' 1, 3	Physical Lab. Field Work, Electrical Lab. Drawing,	6 (a) 1, 2, 4 (a) 3, 3' 1, 2, 4, 6 (b)	Chemical Lab. Physical Lab. Electrical Lab. Field Work, Drawing,	2, (b) 3, 3' (a) 6 1, 2, 4 (a) 1, 3, 3', 4 (b)	2-3
3-4	Physical Lab. Chemical Lab. *Mineral Lab. Drawing, Drawing,	1 (a) 6 2, 5 3, 3', 4 1 (b)	Assaying, Field Work, Electrical Lab. Drawing, Drawing,	2 (b) 1, 2, 4 (a) 3, 6 1, 3', 4 (b)	Chemical Lab. Physical Lab. Electrical Lab. Drawing,	2, 6 2, 4 3' 1, 3	Physical Lab. Assaying, Field Work, Electrical Lab. Drawing,	6 (a) 2 (b) 1, 2, 4 (a) 3, 3' 1, 4, 6 (b)	Chemical Lab. Physical Lab. Electrical Lab. Field Work, Drawing,	2 (b) 3, 3' (a) 6 1, 2, 4 (a) 1, 3, 3', 4 (b)	3-4
4-5	Physical Lab. Chemical Lab. *Mineral Lab. Drawing, Drawing,	1 (a) 6 2, 5 3, 3', 4 1 (b)	Assaying, Field Work, Electrical Lab. Drawing, Drawing,	2 (b) 1, 2, 4 (a) 3, 6 3', 4 (b)	Chemical Lab. Physical Lab. Electrical Lab. Drawing,	2, 6 2, 4 3' 1, 3	Physical Lab. Assaying, Field Work, Electrical Lab. Drawing,	6 (a) 2 (b) 1, 2, 4 (a) 3, 3' 1, 4, 6 (b)	Chemical Lab. Physical Lab. Electrical Lab. Field Work, Drawing,	2 (b) 3, 3' (a) 6 1, 2, 4 (a) 1, 3, 3', 4 (b)	4-5

1. Civil Engineering; 2. Mining Engineering; 3 and 3'. Mechanical and Electrical Engineering; 4. Architecture; 5. Analytical and Applied Chemistry; 6. Chemical Engineering; *University of Toronto. (a) First Term. (b) Second Term. Subjects not numbered are common to all the departments. In the department of Analytical and Applied Chemistry all hours not otherwise allotted are to be spent in the laboratories.

†An option is allowed between the subjects indicated by 3 and those by 3'.

Saturday from 9-12 will be devoted to Field Work during the months of October and November and to drawing the remainder of the Session.

FOURTH OR POST-GRADUATE YEAR.

There is no regular time table for the work of this year. The time of the students is spent almost wholly in the engineering, chemical and assaying laboratories. The hours are from 9 a.m. to 5 p.m., every working day during the session. Lectures are given at such hours as suit the laboratory work.

FACULTY OF THE SCHOOL.

Principal..... J. GALBRAITH, M.A., LL.D.
Registrar..... A. T. LAING, B.A. Sc.

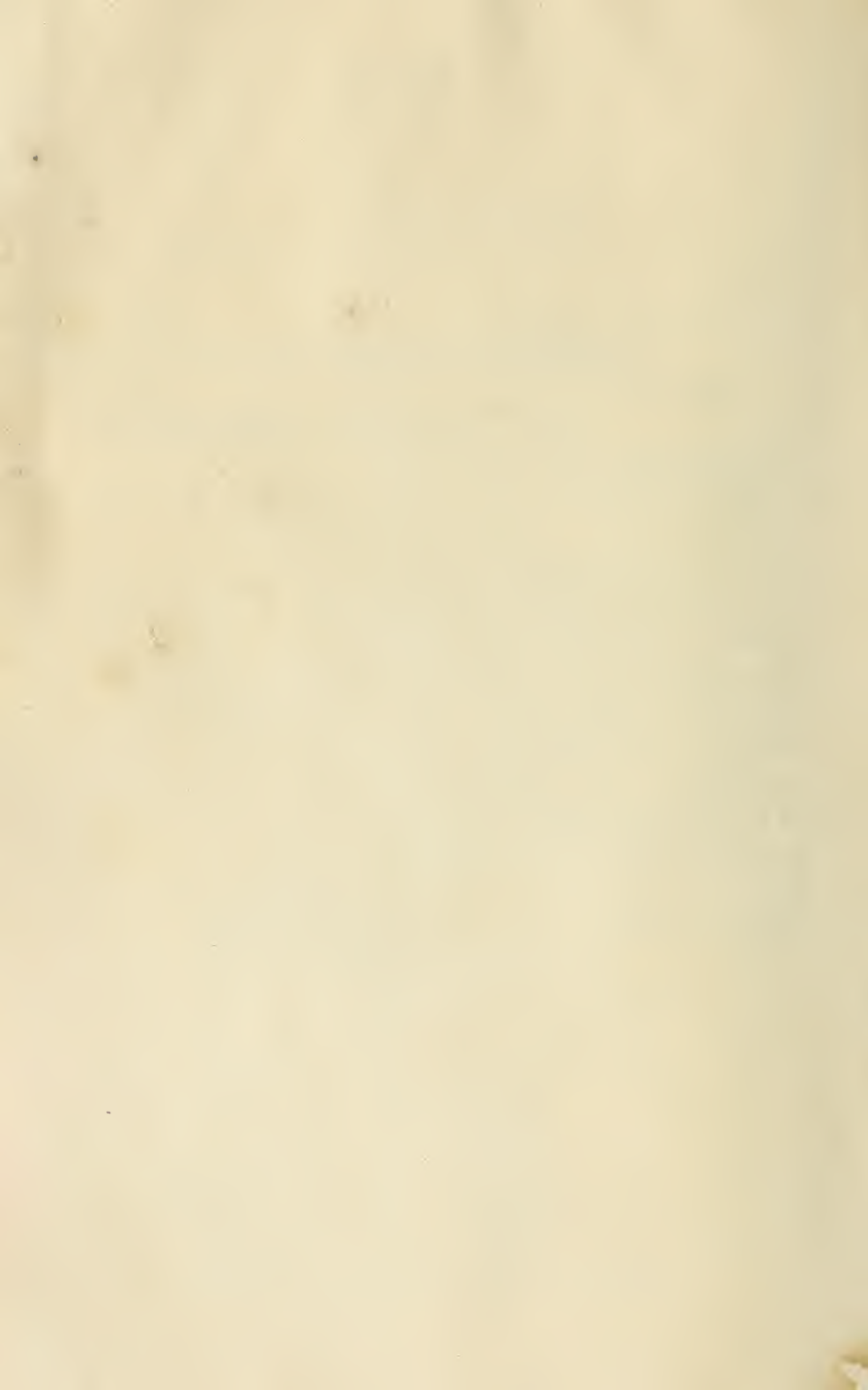
MEMBERS OF TEACHING STAFF:

J. GALBRAITH, M.A., LL.D.....*Professor of Engineering (Chairman).*
 W. HODGSON ELLIS, M.A., M.B....*Professor of Applied Chemistry.*
 A. P. COLEMAN, M.A., Ph.D.....*Professor of Geology.*
 L. B. STEWART, O.L.S., D.T.S.....*Professor of Surveying and Geodesy.*
 C. H. C. WRIGHT, B.A. Sc., Mem. O.A.A, *Professor of Architecture.*
 T. R. ROSEBRUGH, M.A.....*Professor of Electrical Engineering.*
 G. R. MICKLE, B.A.....*Lecturer in Mining.*
 R. W. ANGUS, B.A. Sc.....*Lecturer in Mechanical Engineering.*
 J. MCGOWAN, B.A., B.A.Sc.....*Lecturer in Applied Mechanics.*
 J. W. BAIN, B.A.Sc.....*Lecturer in Applied Chemistry.*
 G. R. ANDERSON, M.A.....*Lecturer in Physics.*
 H. G. McVEAN, B.A.Sc.....*Demonstrator in Mechanical Engineering.*
 H. W. PRICE, B.A.Sc.....*Demonstrator in Electrical Engineering.*
 E. G. R. ARDAGH, B.A.Sc.....*Demonstrator in Chemistry.*
 P. GILLESPIE, B.A.Sc.....*Demonstrator in Applied Mechanics.*
 J. R. COCKBURN, B.A.Sc.....*Demonstrator in Drawing.*
 A. E. GIBSON, B.A.Sc.....*Fellow in Civil Engineering.*
 J. A. McFARLANE, B.A.Sc.....*Fellow in Mechanical Engineering.*
 H. G. SMITH, B.A.Sc.....*Fellow in Electrical Engineering.*
 G. J. MANSON, Grad.S.P.S.....*Fellow in Electrical Engineering.*
 E. WADE, Grad.S.P.S.....*Fellow in Chemistry.*
 S. DUSHMAN, B.A.....*Fellow in Chemistry.*
 J. L. R. PARSONS, B.A, D.L.S.....*Fellow in Surveying.*
 N. D. WILSON, B.A.Sc.....*Fellow in Surveying.*
 M. R. RIDDELL, Grad.S.P.S.....*Fellow in Drawing.*
 J. G. McMILLAN, B.A.Sc.....*Fellow in Mining.*
 J. A. HORTON, Grad.S.P.S.....*Lecture Assistant in Chemistry.*

MEMBERS OF FACULTY OF ARTS:

whose classes are attended by the Regular Students of the School:

- R. RAMSAY WRIGHT, M.A., LL.D...*Professor of Biology.*
 ALFRED BAKER, M.A.....*Professor of Mathematics.*
 W. R. LANG, D. SC.....*Professor of Chemistry.*
 T. L. WALKER, M.A., Ph.D.....*Professor of Mineralogy and Petrography.*
 W. L. MILLER, B.A., Ph.D.....*Associate Professor of Physical Chemistry.*
 ALFRED T. DELURY, B.A.....*Associate Professor of Mathematics.*
 J. C. FIELDS, B.A., Ph.D.....*Associate Professor of Mathematics.*
 M. A. MCKENZIE, M.A.....*Associate Professor of Mathematics.*
 W. A. PARKS, B.A., Ph.D.....*Lecturer in Mineralogy.*
 F. B. KENRICK, M.A., Ph.D.....*Lecturer in Chemistry.*
 F. B. ALLAN, M.A., Ph.D.....*Lecturer in Chemistry.*
 J. G. PARKER, B.A.....*Fellow in Mathematics.*
 H. L. KERR, B.A.....*Class Assistant in Mineralogy.*
 W. H. COLLINS, B.A.....*Class Assistant in Mineralogy.*
-



SCHOOL OF PRACTICAL SCIENCE.

PROVINCE OF ONTARIO.

CALENDAR FOR THE SESSION 1905-1906.



THE Legislative Assembly during the Session of 1877 gave its sanction to the establishment of a School of Practical Science on the basis proposed in the memorandum of the Minister of Education confirmed by the Lieutenant-Governor in Council on the 3rd day of February, 1877.

By the scheme thus approved of, the Government effected an arrangement with the Council of University College whereby the students of the School of Practical Science enjoyed full advantage of the instruction given by its professors and lecturers in all the departments of science which were embraced in the work of the School.

This arrangement was brought to an end in 1899 by the transfer of the department of science above referred to, from University College to the University of Toronto under the operation of the University Federation Act.

In order that the students of the School might continue to enjoy the advantage of the instruction of the above departments, the Senate of the University of Toronto passed a Statute in October, 1889, affiliating the School to the University, which Statute was confirmed by the Lieutenant-Governor on the 30th day of October, 1889.

By an Order-in-Council, approved by the Lieutenant-Governor, on the 6th day of November, 1889, a Principal was appointed, and the management of the School was entrusted to a council composed of the Principal as chairman, and the Professors, Lecturers and Demonstrators appointed on the Teaching Faculty of the School.

By an Order-in-Council dated the 30th day of January, 1903, the Council of the School was made to consist of the Principal, the Professors and Lecturers, together with the Registrar.

The management and discipline of the School is vested in the Council.

By a Statute of the Senate of the University of Toronto, passed on December 14th, 1900, the teaching staff and examiners of the School of Practical Science, together with the examiners for the degree of B.A.Sc., and professional degrees in Engineering, were constituted ex-officio the Faculty of Applied Science and Engineering of the University of Toronto.

The statute is as follows :

By the Senate of the University of Toronto.

Be it enacted :

1. That the Faculty of Applied Science and Engineering be hereby established.

2. That the courses and examinations of the School of Practical Science leading to the diploma of the School and to the special certificates of the School, together with the courses and examinations leading to the degrees of Bachelor of Applied Science (B.A.Sc.), Civil Engineer (C. E.), Mining Engineer (M. E.), Mechanical Engineer (M. E.), and Electrical Engineer (E. E.), be the curriculum and examinations of the University in the said faculty.

3. That the members of the teaching staff of the School of Practical Science be the members of the teaching staff of the University in the said faculty.

4. That the examiners for the School of Practical Science, whether members of the teaching staff of the said School or otherwise, together with the examiners for the degrees named in clause 2, be the examiners of the University in the said faculty.

5. That the regular students of the School of Practical Science in the first, second, third and fourth years respectively be the undergraduates of the University in the corresponding years in the said faculty.

6. That the non-regular, occasional and special students of the School of Practical Science be the non-regular, occasional and special students of the University in the said faculty.

7. That the provisions of this statute apply, as far as may be, to all graduates of the School of Practical Science and to all graduates of the University in Applied Science and Engineering.

8. That no liability shall be incurred by the University of Toronto for the support or maintenance of the faculty hereby established.

BUILDINGS.

The work of the School is now carried on in two buildings, viz., the Engineering Building and the Chemistry and Mining Building.

The former building is devoted to strength and elasticity of materials, construction, machine design and mechanism, mechanics, hydraulics, thermodynamics, heat engines and boilers, pumps, electricity and electrical engineering, optics, acoustics, surveying, geodesy and astronomy, drawing, descriptive geometry, architecture, cements, masonry, etc.

The Chemistry and Mining Building affords accommodation for analytical and applied chemistry, electrochemistry, metallurgy, assaying, mining and milling, mineralogy and geology. The administration offices of the School are in this building.

DEPARTMENTS.

There are six regular Departments of Instruction, in each of which Diplomas are granted, viz. :—

1. Civil Engineering.
2. Mining Engineering.
3. Mechanical and Electrical Engineering.
4. Architecture.
5. Analytical and Applied Chemistry.
6. Chemical Engineering.

The instruction given in these departments is designed to give the student a thorough knowledge of the scientific principles

underlying the practice in the several professions, and also such a training as may make him immediately useful when he commences actual professional work.

DIPLOMA.

The regular course in each department is of three years' duration and leads to the Diploma of the School. The instruction is given partly in the lecture rooms and partly in the drafting rooms, laboratories and field. A certain amount of work is laid out for the summer vacation. The course of study in each department is general, and beyond the selection of his department the student has no opportunity to specialize.

DEGREE OF B. A. Sc.

After the general course is finished the Diploma of the School is granted and the student is at liberty either to enter the active life of his profession or to spend another year in special work. This year is called the fourth or post-graduate year. Graduates electing to proceed with their studies are allowed to select two subjects from an approved list, and are required to confine their whole attention to these subjects during the fourth year. The subjects in this list are such as require a large amount of time to be devoted to laboratory and other practical work. The advanced theoretical instruction is given either at the beginning or end of the working-day, in order not to break up the time allotted to practical work. During this year the student is required to prepare a thesis on some subject connected with his work. The practical examinations are held by the School, while the written examinations and the examination of the thesis are held by the University. After complying with all requirements, the candidate receives from the University the degree of Bachelor of Applied Science (B.A.Sc.).

PROFESSIONAL DEGREES.

Bachelors of Applied Science may, after three years spent in professional work, present themselves for the degrees of Civil Engineer (C.E.), Mining Engineer (M.E.), Mechanical Engineer (M.E.), or Electrical Engineer (E.E.), as the case may be, subject to the rules and regulations established by the University.

ADMISSION.

Candidates will be admitted as regular students in any of the regular departments of instruction on presenting satisfactory certificates of having passed either :

(a) The matriculation examination in Arts, in any University in His Majesty's Dominions, or in all the subjects of such matriculation examination except Latin and Greek, provided, however, that if an alternative be allowed by the University between either Latin or Greek and modern subjects (e.g., Modern Languages, Physics, Chemistry, etc.), the latter subjects must be taken if the former are omitted; or

(b) The Junior Leaving Examination of the Province of Ontario, including either French or German.

The case of the University of Toronto will serve as an illustration. The subjects for pass Junior Matriculation in Arts in the University of Toronto are: English Composition, English Literature, English Grammar, Algebra, Euclid, Arithmetic, History (British, Canadian and Ancient), Latin and any two of the following: Greek, French, German, Experimental Science (Physics and Chemistry). A candidate who desires to enter the School of Practical Science as a regular student, without taking Latin or Greek, will be required to present a certificate from the Registrar that he has passed in the following subjects:—English Composition, English Literature, English Grammar, Algebra, Euclid, Arithmetic, History (British, Canadian and Ancient), and any two of the following:—French, German, and Experimental Science (Physics and Chemistry).

Applications for admission to the regular Departments based upon other certificates than those above mentioned will be considered by the Council. Such applications accompanied by the necessary certificates and information, must be in the hands of the Registrar of the School before September 20th.

Students intending to write at the High School Leaving Examination for the purpose of entering the School of Practical Science may do so without having previously passed the Primary Examination. Their papers must be endorsed "For admission to School of Practical Science."

FEES, DEPOSITS, ETC.

SESSIONAL FEES AND DEPOSITS.

These are payable in two instalments, one in each term.

The first instalment must be paid before December 1st, the second before March 1st.

A discount of two dollars will be made on each instalment if paid before the end of the first calendar month of the term in which it is due.

FIRST YEAR.

First Term—		
Sessional Fees	\$35 00	
Library	1 00	
Deposit... ..	5 00	
	<hr/>	\$41 00
Second Term—		
Sessional Fees		35 00
		<hr/>
		76 00

SECOND YEAR.

First Term—		
Sessional Fees	40 00	
Library	1 00	
Deposit... ..	5 00	
	<hr/>	46 00
Second Term—		
Sessional Fees		40 00
		<hr/>
		86 00

THIRD YEAR.

First Term—		
Sessional Fees	45 00	
Library	1 00	
Deposit... ..	5 00	
	<hr/>	51 00
Second Term—		
Sessional Fees		45 00
		<hr/>
		96 00

The total expense of a regular three years' course in any department is about \$360, which amount includes books, instruments and materials as well as the fees, etc., stated in above table.

Information as to the text books, instruments and materials to be purchased by the students will be given on registration at the beginning of the session.

Fourth or Post-Graduate Year.—The fees, etc., in this year are as follows :

First Term—

Sessional Fees	\$35 00	
Library	1 00	
Deposit... ..	5 00	
		41 00

Second Term—

Sessional fees	35 00	
*University fees	20 00	
		55 00

Total		96 00
----------------	--	-------

LODGING AND BOARD.

Accommodation is readily obtainable in numerous private boarding-houses within convenient distance of the School, at a cost of from three dollars and a half upwards for comfortable lodging with board; or rooms may be rented at a cost of from one dollar and a half per week upwards, and board obtained separately at moderate rates. A list of accredited boarding-houses is kept by the Secretary of the University College Young Men's Christian Association, and students are recommended to consult him with reference to the selection of suitable accommodation.

FELLOWSHIPS.

Fellowships have been established in the following: Civil Engineering, Mechanical Engineering, Electrical Engineering, Mining Engineering, Surveying, Drawing, Analytical and Applied Chemistry, Lecture Assistant in Chemistry.

Each fellowship is of the value of \$500 per annum.

The fellows are required to take such portions of the work of instruction as may be assigned to them by the Council.

Application for these fellowships are to be made annually to the Registrar on or before the 1st day of May.

*Payable to the Bursar of the University.

REGULATIONS RESPECTING EXAMINATIONS.

All students who are candidates for diplomas or certificates shall be in attendance at the school during the whole of each term, unless exempted by special permission of the Council. The term will not be allowed to any student who has attended less than three-fourths of the required lectures and practical work, or who has been reported to the Council for bad conduct and adjudged guilty thereof.

Candidates are required to send to the Registrar at least three weeks before the commencement of the Annual Examinations in April, and the Supplemental Examinations in September, notice in writing of their intention to take such examinations.

No candidate will be allowed to write at the Annual Examinations who has not paid all fees and dues for which he is liable.

The minimum percentage of marks required to pass in the written examinations will be fixed from time to time by the Council.

The minimum percentage of marks required to pass in the practical work connected with any subject shall be one and one-half times the minimum required in the case of a written examination.

In order to pass in subjects wherein both written and practical examinations are held, the candidate must pass in both examinations.

In order to pass the practical examinations in the subjects of applied mechanics, descriptive geometry, surveying and architecture, the drawings set in the lectures on these subjects must be made.

Drawings prescribed for the first term of the session will not be counted unless finished in that term.

To pass in drawing, the drawings already referred to must be made, together with as many others as may be prescribed.

The number of practice sheets to be made by each student will depend upon his progress.

The minimum number of drawings shall be twenty-five, and the maximum number thirty-five, except in the Department of Analytical and Applied Chemistry, in which the numbers shall be fifteen and twenty-five respectively.

The minimum percentage of marks prescribed for practical work must be obtained in drawing.

The drawings must be made on paper 15 in. x 22 in., unless otherwise prescribed.

The Council reserves the right of disposing of the drawings as they may think proper. No drawings may be removed from the school without permission.

No drawings will be counted which have not been made in the drafting rooms, and during the hours allotted to such work.

To pass in Surveying the minimum percentage required for practical work must be obtained in the field work.

No field notes will be counted which have not been taken in the field, and during the hours allotted to such work.

Students taking practical astronomy are required to take observations in the field for time, latitude, and azimuth.

Vacation Work.

Vacation work must be handed in, on or before the first day of the session.

Vacation notes must be on construction only, and contain not less than twenty, nor more than thirty pages of sketches. These sketches must be free-hand pencil drawings with figured dimensions.

EXEMPTIONS.

No notes, whether taken during the session or the vacation, will be counted unless made in the standard note books of the School.

The minimum percentage of marks required for practical work must be made in the case of vacation notes.

• **Supplementary Examinations, Etc.**

A candidate who fails in one or two subjects at the annual examinations, will be required to take supplemental examinations in such subjects.

The supplemental written examinations will begin on the 26th of September, 1905.

No candidate will be allowed to enter the fourth year who has not passed his supplemental examinations.

In the case where a candidate fails to pass a supplemental examination it will count as one of the two supplemental examinations which may be allowed him after the next annual examination.

Candidates who fail in being promoted to a higher year or in graduating will be required to take again the whole course of instruction, both theoretical and practical, of the year in which they fail before presenting themselves a second time for examination.

The fees to be paid by a student repeating a year will be the regular fees for such year.

Students are required to spend the hours of every working day between 9 a.m. and 5 p.m. at the work laid down in the time-table.

EXEMPTIONS.

Application for exemption from any of the regulations of the School must be made to the Council in writing and the particulars of the case fully stated.

PRIZES.

Through the liberality of Messrs. T. Kennard Thomson, C.E., of New York, the Hon. W. H. Montague, M.D., W. K. George and Noel Marshall, of Toronto, the following prizes in books are open for competition for general proficiency in the Third Year, subject to the conditions of the Council:—

T. Kennard Thomson ...	Civil Engineering	1st	Prize	\$10
Hon. W. H. Montague	Mining Engineering	1st	"	10
"	" " " "	2nd	"	5
"	Architecture	1st	"	10
Standard Silver Co., (W.				
K. George.....	Mechanical Engineering ..	1st	"	10
"	" " " " " "	2nd	"	5
"	" " " " " "	1st	"	10
Noel Marshall	Electrical Engineering...	1st	"	10
"	" " " " " "	1st	"	10
"	" " " " " "	2nd	"	10

HONOURS

Honours will be granted in each department to the students who pass in all the subjects and obtain at least 66 per cent. of the total number of marks allotted to the department at the annual examinations.

Papers read before the Engineering Society may be considered in granting Honours.

The Honour list will be arranged alphabetically.

REGULAR EXAMINATIONS.

(APPROXIMATE LIST.)

1. Year.

EXAMINATIONS HELD AT THE END OF THE SESSION.

Algebra.	Chemistry, Inorganic . . . 5, 6.
Euclid.	Mineralogy 1, 2, 4, 5, 6.
Plane Trigonometry.	History of Architecture . . . 4.
Analytical Geometry 1, 2, 3, 4, 6	Electricity 3, 5, 6.
Descriptive Geometry	Magnetism and Electric-
..... 1, 2, 3, 4, 6	ity 3, 5, 6.
Surveying 1, 2, 3, 4, 6	Statistics 1, 2, 3, 4, 6.
Chemistry, Elementary.	Dynamics 1, 2, 3, 4, 6.

EXAMINATIONS HELD DURING THE SESSION.

Drawing	
Field Notes	1, 2, 4.
Architectural Sketches	4.
Practical Electricity	3, 5, 6.
Practical Chemistry	
Practical Mineralogy	1, 2, 4, 5, 6.

II. Year.

EXAMINATIONS HELD AT THE END OF THE SESSION.

Calculus 1, 2, 3, 4, 6.	Metallurgy.
Astronomy 1.	Chemistry, Inorganic . . . 5, 6.
Optics.	Chemistry, Organic 5.
Strength of Mater-	Chemistry, Physical 5, 6.
ials 1, 2, 3, 4, 6.	Chemistry, Applied.
Dynamics 1, 2, 3, 6.	Electricity 3, 5, 6.
Theory of Mechanism . . . 3, 6.	Descriptive Geometry
Hydrostatics.	..... 1, 2, 3, 4, 6.
History of Architecture . . . 4.	Surveying 1, 2, 4.
Orders of Architecture . . . 4.	Sphericol Trigonometry 1, 2, 3.
History of Ornament 4.	Geology 1, 2, 5.
Lithology 2, 4.	

-
- | | |
|--------------------------------------|---|
| 1. Civil Engineering. | 3. Mechanical and Electrical Engineering. |
| 2. Mining Engineering. | 4. Architecture. |
| 5. Analytical and Applied Chemistry. | 6. Chemical Engineering. |

EXAMINATIONS HELD DURING THE SESSION.

Drawing.....	1,2,3,4,6.
Field Notes.....	1,2.
Construction Notes...	1,2,3,4,6.
Architectural Sketches ...	4.
Experimental Physics.	
Practical Electricity ...	3,5,6.
Practical Chemistry (qualitative).....	1,2,3,4.
Practical Chemistry (quantitative)	2,5,6.
Practical Mineralogy ...	1,2,5.
Practical Lithology ...	2.
German.....	5.

III. Year.

EXAMINATIONS HELD AT THE END OF THE SESSION.

Magnetism and Electric- ity.....	3,3',5.	Mechanics of Machin- ery	3,3',6.
Electricity.....	1,2,4,5,	Machine Design	3,3',6.
Alternating Current	3'.	Hydraulics.....	1,2,3,3',4,6.
Electrical Design	3'.	Thermodynamics ..	1,2,3,3',6.
History of Architecture	4.	Heat Engines.....	3.
History of Ornament.....	4.	Descriptive Geometry...1,2,4.	
Principles of Decoration....	4.	Electrochemistry	3',5,6.
Elements of Design.....	4.	Practical Astronomy and Geodesy.....	1.
Method of least Squares....	1.	Surveying and Levelling	1,2.
Chemistry, Organic,	5,6.	Metallurgy.....	2,5,6.
Chemistry, Applied.		Mining and Ore Dressing ..	2.
Sanitary plumbing, Heating and Ventilation	4.	Ore Deposits.....	2.
Theory of Compound Stress.....	1.	Crystallography.....	2.
Economic Geology.....	1,2,5.	Mill Design.....	3.
Theory of Construc- tion.....	1,2,3,4,6.	Biology.....	5.
		Acoustics.....	4.

-
- | | |
|--------------------------------------|--|
| 1. Civil Engineering. | 3. Mechanical and Electrical Engineering |
| 2. Mining Engineering. | 4. Architecture. |
| 5. Analytical and Applied Chemistry. | 6. Chemical Engineering. |

LIST OF EXAMINATIONS.

EXAMINATIONS HELD DURING THE SESSION.

Drawing	1,2,3,3',5,6.
Field Notes	1,2.
Construction Notes	1,3,3',4,6.
Architectural Sketches... ..	4.
Experimental Physics	
Practical Electricity	3,3',5,6.
Practical Electrochemistry.....	3,5,6.
Practical Chemistry	2,5,6.
Practical Biology... ..	5.
Determinative Mineralogy	2,5.
Assaying	2,5.
German	5,6.

-
- | | |
|------------------------------------|---|
| 1. Civil Engineering. | 3. Mechanical and Electrical Engineering. |
| 2. Mining Engineering. | 4. Architecture. |
| 5. Analytical and Applied Science. | 6. Chemical Engineering. |
-

DEPARTMENTS.

CIVIL ENGINEERING.

I. Year.

MATHEMATICS.

Euclid, algebra, plane trigonometry.
Analytical plane geometry.

DRAWING.

Copying from the flat, lettering, topography.
Graphics.
Descriptive geometry in its application to plane-sided solids, orthographic (including isometric) and oblique projection.
Original surveys.

CHEMISTRY.

General principles of chemistry.
The elements and their classification.
Special study of the non-metals.
Laboratory work.

MINERALOGY.

Introductory course.
Laboratory work.

MECHANICS.

Statics and dynamics (with special reference to structures and machines).

SURVEYING.

Field and office work, chain and compass surveys, topography, preliminary instructions in the use of the transit-theodolite, plotting, mensuration.

II. Year.

MATHEMATICS.

Differential and integral calculus.

Spherical trigonometry.

Plane astronomy.

DRAWING.

Subjects of first year continued.

Coloring and shading applied to both topographical and construction drawing.

Descriptive geometry in its application to solids bounded by curved surfaces. Shades and shadows, perspective.

Machines and structures. (Drawings made from both copies and original notes.)

CHEMISTRY.

The metals and their salts.

Alkali manufacture.

Building material, mortars and cements.

Glass and pottery.

Water and its purification.

Outlines of organic chemistry.

Laboratory work.

MECHANICS.

Statics and dynamics (pure and applied).

Strength and elasticity of materials.

Experimental work in engineering laboratory.

SURVEYING.

Transit-theodolite surveying.

Levelling.

Railway location curves, etc.

Topographic, hydrographic and mining surveying.

MINERALOGY.

- Blowpipe practice.
- Determination of minerals.

GEOLOGY.

- Elements.

METALLURGY.

- Iron and steel.

PHYSICS.

- Optics.
- Hydrostatics.
- Laboratory work.

VACATION WORK.

- Constsuction Notes.

III. Year.

DRAWING.

- Subjects of previous years continued.
- Descriptive geometry—the various projections of the sphere and principle of map construction, stone cutting.
- Original designs—bridges, roofs, floors, arches, etc.

CHEMISTRY.

- Thermo-chemistry, fuels and combustion.
- Destructive distillation.
- Coal tar products.
- Explosives.
- Laboratory work.

MECHANICS.

- Statics and dynamics (pure and applied).
- Strength and elasticity of materials.
- Theory of construction.

MECHANICS—*Continued*

Practical designs—bridges, roofs, floors, arches, retaining walls, foundations, etc.

Thermodynamics and theory of the steam engine.

Hydraulics, sewerage, water supply.

Laboratory work in heat.

SURVEYING.

Levelling.

Profiles, cross sections, field work and plotting.

Computation of quantities.

Mathematical theory of surveying instruments.

Trigonometrical and barometrical levelling.

Geodesy.

Practical astronomy (treated in the manner required for the O.L.S. and D.L.S. examinations).

Least squares.

ELECTRICITY.

Dynamos and motors.

Arc and incandescent lamps.

Power transmission.

GEOLOGY.

Economic geology.

VACATION WORK.

Construction Notes.

MINING ENGINEERING.

I. Year.

MATHEMATICS.

Euclid, algebra, plane trigonometry.

Analytical plane geometry.

DRAWING.

Copying from the flat, lettering, topography.

Graphics.

Descriptive geometry in its application to plane-sided solids, orthographic. (including isometric) and oblique projection.

CHEMISTRY.

- General principles of chemistry.
- The elements and their classification.
- Special study of the non-metals.
- Laboratory work.

MINERALOGY.

- Introductory course.
- Laboratory work.

MECHANICS.

- Statics and dynamics (with special reference to structures and machines).

SURVEYING.

- Field and office work, chain and compass surveys, topography, preliminary instruction in the use of the transit-theodolite, plotting, mensuration.

II. Year.

MATHEMATICS.

- Differential and integral calculus.
- Spherical trigonometry.

DRAWING.

- Subjects of the first year continued.
- Coloring and shading applied to both topographical and construction drawing.
- Descriptive geometry in its application to solids bounded by curved surfaces. Shades and shadows and perspective.
- Machines and structures from both copies and original notes.

CHEMISTRY.

- The metals and their salts.
- Alkali manufacture.
- Building materials, mortars and cements.
- Glass and pottery.
- Water and its purification.
- Outlines of organic chemistry.
- Laboratory work.

MECHANICS.

Statics and dynamics (pure and applied).
Strength and elasticity of materials.

SURVEYING.

Transit-theodolite surveying.
Levelling.
Railway location, curves, etc.
Topographic, hydrographic and mining surveying.

GEOLOGY.

Elements.

MINERALOGY.

Blowpipe practice.
Determination of minerals.
Lithology.

METALLURGY.

Iron and steel.

PHYSICS.

Optics.
Hydrostatics.
Laboratory work.

VACATION WORK.

Construction Notes.

III. Year.

DRAWING.

Subject of previous years continued.
Descriptive geometry.
Various projections of the sphere, and principles of map construction.
Stone cutting.
Original designs—bridges, roofs, floors, etc.

CHEMISTRY.

Thermochemistry, fuels and combustion.
Destructive distillation.
Coal tar products.
Explosives.
Laboratory work.

MECHANICS.

Statics and dynamics (pure and applied).
Strength and elasticity of materials.
Theory of construction.
Thermodynamics and theory of steam engine.
Hydraulics.
Experimental work in engineering laboratory.

SURVEYING.

Levelling.
Profiles, cross-sections, field work and plotting.
Computation of quantities.
Mathematical theory of surveying instruments.
Trigonometrical and barometrical levelling.

ELECTRICITY.

Dynamos and motors.
Arc and incandescent lamps.
Power transmission.

MINERALOGY AND GEOLOGY.

Economic geology.
Palaeontology.
Crystallography.
Ore deposits.
Determinative mineralogy.

METALLURGY.

Metallurgy of gold, silver, nickel, copper, etc.
Mining and ore dressing.
Assaying.

VACATION WORK.

Construction Notes.

MECHANICAL AND ELECTRICAL ENGINEERING.

I. Year.

MATHEMATICS.

Euclid, algebra, plane trigonometry.
Analytical plane geometry.

DRAWING.

Copying from the flat, lettering, graphics.
Descriptive geometry in its application to plane sided solids, orthographic (including isometric), and oblique projection.

CHEMISTRY.

General principles of chemistry.
The elements and their classification.
Special study of the non-metals.
Laboratory work.

MECHANICS.

Statics and dynamics (with special reference to structures and machines).

SURVEYING.

Application of trigonometry and principles of measurement (lectures only).

ELECTRICITY.

Magnetism, electrostatics.
Electromagnetism, current electricity.
Wiring and distribution.
Introductory laboratory course.

II. Year.

MATHEMATICS.

Differential and integral calculus.
Spherical trigonometry.

DRAWING.

Subjects of first year continued.
Coloring and shading applied in constructive drawing.
Descriptive geometry in its application to solids bounded by curved surfaces, shades, shadows and perspective.
Machines and structures (drawings made from both copies and original notes).

CHEMISTRY.

The metals and their salts.
Alkali manufacture.
Building materials, mortars and cements.
Glass and pottery.
Water and its purification.
Outlines of organic chemistry.
Laboratory work.

MECHANICS.

Statics and dynamics (pure and applied).
Theory of mechanism.
Strength and elasticity of materials.
Materials of construction.
Methods and processes.

METALLURGY.

Iron and steel.

PHYSICS.

Optics.
Hydrostatics.
Laboratory work.

ELECTRICITY.

Electrical measurements, lectures and laboratory work.

VACATION WORK.

Construction Notes.

III. Year.

In this year an option is allowed between Theory of Heat Engines and Mill Building Design on the one hand, and Alternating Current, Electrical Design and Electrochemistry on the other. The former is denoted in the time table and elsewhere by 3 and the latter by 3'.

DRAWING.

Subjects of previous year continued.
Original designs.

CHEMISTRY.

Thermochemistry, fuels and combustion.
Destructive distillation.
Coal tar products.
Explosives.

ELECTROCHEMISTRY.

Lectures and laboratory work.

MECHANICS.

Subjects of previous year continued.
Applied mechanics.
Mechanics of machinery, machine design, thermodynamics and theory of steam engine, theory of heat engines, hydraulics.
Application of principles to practical problems connected with the design, construction and testing of various prime motors and machines.
Experimental work in engineering laboratory.
Mill building design.

ELECTRICITY.

Lectures and practical work on electromagnetism, applied electromagnetism.
Direct and alternating current.
Dynamo-electric machinery.
Armature windings.
Electrical design.

ORIGINAL DESIGNS.

Engine and machine design.

VACATION WORK.

Construction Notes.

In addition to taking the course of instruction in the School and passing the requisite examinations, a candidate for the diploma in Mechanical and Electrical Engineering will be required to present satisfactory evidence of having had at least one year's good practical experience in one of the principal trades connected with mechanical work, such as machinist, pattern-maker, moulder steam engineer, etc. There is no restriction as to the place where the candidate may have gained such practical experience.

ARCHITECTURE.

I. Year.

MATHEMATICS.

Euclid, algebra, plane trigonometry.

Analytical plane geometry.

DRAWING.

Copying from the flat, lettering, topography, graphics.

Descriptive geometry in its application to plane sided solids, orthographic (including isometric) and oblique projection.

Rendering in pencil and pen and ink.

CHEMISTRY.

General principles of chemistry.

The elements and their classification.

Special study of the non-metals.

Laboratory work.

MECHANICS.

Statics (with reference to structures).

Dynamics (preliminary to the study of hydraulics).

SURVEYING.

Principles, chain surveying, mensuration.

MINERALOGY.

Introductory course.

Laboratory work.

HISTORY OF ARCHITECTURE.

General introduction.

Ancient architecture.

Egyptian, Assyrian and Persian.

II. Year.

MATHEMATICS.

Differential and integral calculus.

DRAWING.

Instrumental drawing, drawing from the cast, sketching
and water color, pen and ink.

Descriptive geometry (curved surfaces).

Shades and shadows and perspective.

CHEMISTRY.

The metals and their salts.

Alkali manufacture.

Building materials, mortars and cements.

Glass and pottery.

Water and its purification.

Outlines of organic chemistry.

Laboratory work.

MECHANICS.

Statics (pure and applied).

Strength and elasticity of materials.

Materials of construction.

SURVEYING.

Use of transit and level.

Mensuration.

LITHOLOGY.

Elementary course.

METALLURGY.

Iron and steel.

PHYSICS.

Optics.

Hydrostatics.

Laboratory work.

HISTORY OF ARCHITECTURE.

Greek and Roman.

Romanesque and Byzantine.

ORDERS AND ELEMENTS OF ARCHITECTURE.

Principles of planning.

HISTORY OF ORNAMENT.

Ancient.

Classic—Greek, Roman.

VACATION WORK.

Construction Notes.

III. Year.

DRAWING.

Descriptive geometry.

Advanced perspective, stone cutting.

Water color sketching.

Original designs—floors, trusses, arches, etc.

CHEMISTRY.

Thermochemistry, fuels and combustion.

Destructive distillation.

Coal tar products.

Explosives.

THEORY OF CONSTRUCTION.

Experimental work in engineering laboratory.

Electricity.

Hydraulics.

SANITARY SCIENCE.

House drainage and plumbing.

Ventilation and heating.

SURVEYING.

Levelling, setting out excavation, mensuration.

ELECTRICITY.

Dynamos and motors.

Arc and incandescent lamps.

Power transmission.

PHYSICS.

Acoustics, heat.

Laboratory work.

HISTORY OF ARCHITECTURE.

Gothic and Renaissance, with special reference to England.

ELEMENTS OF DESIGN.

Principles of planning with special reference to residences.

Relation between plan and elevations.

HISTORY OF ORNAMENT.

Early Christian : Gothic and Renaissance.

PRINCIPLES OF DECORATION.

VACATION WORK.

Construction Notes.

ANALYTICAL AND APPLIED CHEMISTRY.

I. Year.

MATHEMATICS.

Euclid, algebra, plane trigonometry.

DRAWING.

Copying from the flat, lettering.

Model drawing.

CHEMISTRY.

General principles of chemistry.

The elements and their classification.

Special study of the non-metals.

Laboratory work.

MINERALOGY.

Introductory course.

Laboratory work.

ELECTRICITY.

Magnetism, electrostatics.

Electromagnetism, current electricity.

Wiring and distribution.

Introductory laboratory course.

II. Year.

CHEMISTRY.

The metals and their salts.

Alkali manufacture.

Building materials, mortars and cements.

Glass and pottery.

Water and its purification.

Organic chemistry.

Elementary physical chemistry.

Laboratory work in quantitative and qualitative analysis.

MINERALOGY.

Blowpipe practice.

Determination of Minerals.

GEOLOGY.

Physical geography, palaeontology and geology.

METALLURGY.

Iron and steel.

PHYSICS.

Optics.

Hydrostatics.

Laboratory work.

ELECTRICITY.

Electrical measurement, lectures and laboratory work.

GERMAN.

III. Year.

CHEMISTRY.

Thermochemistry, fuels and combustion.

Destructive distillation.

Coal tar products.

Explosives.

Organic chemistry.

Electrochemistry.

Laboratory work.

ELECTRICITY.

Dynamos and motors.

Arc and incandescent lamps.

Power transmission.

GEOLOGY.

Economic geology.

MINERALOGY.

Determinative mineralogy.

METALLURGY.

Gold, silver, nickel, copper, lead.

Assaying.

BIOLOGY.

GERMAN.

CHEMICAL ENGINEERING.

I. Year.

MATHEMATICS.

Euclid, algebra, plane trigonometry.
Analytical plane geometry.

DRAWING.

Copying from the flat, lettering, graphics.
Descriptive geometry in its application to plane-sided solids, orthographic (including isometric), and oblique projection.

SURVEYING.

Application of trigonometry and principles of measurement (lectures only).

MECHANICS.

Statics and dynamics (with special reference to structures and machines).

CHEMISTRY.

General principles of chemistry.
The elements and their classification.
Special study of the non-metals.
Laboratory work.

MINERALOGY.

Introductory course.
Laboratory work.

ELECTRICITY.

Magnetism, electrostatics.
Electromagnetism, current electricity.
Wiring and distribution.
Introductory laboratory course.

II. Year.

MATHEMATICS.

Differential and integral calculus.

DRAWING.

Subjects of first year continued.

Coloring and shading applied in construction drawing.

Descriptive geometry in its application to solids bounded by curved surfaces; shades and shadows, and perspective.

Machines and structures. (Drawings made from both copies and original notes.)

CHEMISTRY.

Thermochemistry, fuels and combustion.

Destructive distillation.

Coal tar products.

Explosives.

Elementary physical chemistry.

Laboratory work.

MECHANICS.

Statics and dynamics (pure and applied).

Theory of mechanism.

Strength and elasticity of materials.

Materials of construction.

Methods and processes.

METALLURGY.

Iron and steel.

PHYSICS.

Optics.

Hydrostatics.

Laboratory work.

ELECTRICITY.

Electrical measurements, lectures and laboratory work.

VACATION WORK.

Construction Notes.

III. Year.

DRAWING.

Subjects of previous year continued.

CHEMISTRY.

Thermochemistry, fuels and combustion.

Destructive distillation.

Coal tar products.

Explosives.

Organic chemistry.

Electrochemistry.

Laboratory work.

METALLURGY.

Gold, silver, nickel, copper, lead.

MECHANICS.

Subjects of previous year continued.

Applied mechanics.

Mechanics of machinery, machine design, thermodynamics and theory of steam engine, hydraulics.

Application of principles to practical problems connected with the design, construction and testing of various prime motors and machines.

Experimental work in engineering laboratory.

ELECTRICITY.

Lectures and laboratory work on electromagnetism, applied electromagnetism.

Direct and alternating current.

Dynamo-electric machinery.

ORIGINAL DESIGNS.

Engine and machine design.

GERMAN.

VACATION WORK.

Construction Notes.

VACATION WORK.

The engineering and architectural students are required to make, during the vacation, full and clear notes of various constructions that may fall under their notice.

The value of the construction notes is taken into account in determining standing at the next annual examination.

THE FOURTH OR POST GRADUATE YEAR.

After the completion of the general three years' course in any department, students are recommended to take up the special work of the fourth year, leading to the degree of Bachelor of Applied Science in the University of Toronto. It is only by so doing that full advantage can be taken of the laboratory equipment of the School. The fourth year enables students to continue under certain restrictions the study of subjects in which they take special interest and is the means adopted in the School of Practical Science of affording them the advantage of elective and special studies.

To be admitted to the fourth year a candidate must be a graduate of the School of Practical Science or an under-graduate of the standing of the fourth year in the University of Toronto in the honour Department of Chemistry- and Mineralogy.

The subjects of study in the fourth year are arranged in the following groups and sub-divisions.

- A. { Astronomy.
Geodesy and Metrology.
- B. { Architecture.
Strength and Elasticity of Materials.
Hydraulics.
Thermodynamics and Theory of Heat Engines.
Electricity and Magnetism.
Electrochemistry.
- C. { Industrial Chemistry.
Sanitary and Forensic Chemistry.
Electrochemistry.
Inorganic and Organic Chemistry.
- D. { Mineralogy and Geology.
Metallurgy and Assaying.

Each student will be required to confine his studies during the session to two subdivisions of one of the above groups.

The subdivision "Inorganic and Organic Chemistry" will be obligatory on all students who select group C.

A student is liable to be called on to assist in any of the experimental and practical work in the group which he has selected, although it may not belong to his special subjects.

Candidates are required to notify the Registrar of the school in writing of their intention to take the fourth year work at least one week before the opening of the session, and to inform him at the same time of the subjects which they propose to take. These subjects will be submitted to the Council for approval at the beginning of the session, and no student will be permitted to take any subject not so approved.

Undergraduates of the University of Toronto of the standing of the fourth year in the Honour Department of Chemistry Mineralogy may be admitted as students of the fourth year in the groups C and D.

Candidates will be required to show a good working acquaintance with translation from either French or German. This will be tested by their ability to translate extracts from scientific works or periodicals not previously specified.

PASS AND HONOURS.

Total marks assigned to fourth year 900
Subdivided as follows:—

Work (reckoned in hours) 540 marks

Records (notes, drawings, etc)... .. 360 marks

FOR PASS :

The minimum percentages are:—

Work, 75 per cent. 405 marks

Records, 50 per cent. 180 marks.

And two-thirds of the total marks assigned ... 600 marks

FOR HONOURS :

In deciding the allotment of honours the whole academic record of the candidate will be taken into consideration, but no honours will be granted unless the candidate shall have received a special recommendation from the member or members of Council under whose supervision his fourth year work has been done.

Honours granted will be mentioned in the certificate required under clause 2 of the statute of the University of Toronto respecting the degree of B.A.Sc.

The above certificate will not be granted to students who have been absent without leave of the Council from more than 10 per cent. of the lectures and practical work of either term of the session.

Courses of reading will be indicated in connection with subjects of study.

The above regulations have been approved by the Senate of the University of Toronto in so far as they affect the degree of B.A.Sc.

DEGREE OF B.A., Sc.

Candidates who have fulfilled the requirements of the Fourth Year in the School of Practical Science are eligible for the degree of Bachelor of Applied Science in the University of Toronto in accordance with a Statute passed by the Senate in 1892, which, with the amendments since made, is as follows :

By the Senate of the University of Toronto.

Be it enacted :

That the Degree of Bachelor of Applied Science (B.A.Sc.) be hereby established to be granted subject to the following conditions and regulations :

1. Candidates for the said degree shall hold the diploma of the School of Practical Science in any one of the regular courses of the said School, or shall be of the standing of the fourth year in the Honour Department of Chemistry and Mineralogy in the University of Toronto.
2. They shall have fulfilled the conditions relating to the Fourth or Post-Graduate year in the School of Practical Science and shall present certificates of having done so to the Registrar of the University. Honours may be granted with such certificates by the Faculty of the School.

3. Each candidate shall prepare a thesis based on the results of his Fourth Year work in the said School of Practical Science for the approval of the University examiners. This thesis must be sent to the Registrar not later than the thirty-first day of March, and is to be accompanied by all necessary drawings, specifications, tables and estimates. To pass in the thesis a candidate must obtain fifty per cent. and to take honors seventy-five per cent. of the marks assigned.
4. Candidates will be required to select two sub-divisions in any one of the following groups, and to pass such written and oral examinations on the subjects selected as may be prescribed by the University examiners.
 - A. { Astronomy.
Geodesy and Metrology.
 - B. { Architecture.
Strength and Elasticity of Materials.
Hydraulics.
Thermodynamics and Theory of Heat Engines.
Electricity and Magnetism.
Electrochemistry.
 - C. { Industrial Chemistry.
Sanitary and Forensic Chemistry.
Electrochemistry.
Inorganic and Organic Chemistry.
 - D. { Mineralogy and Geology.
Metallurgy and Assaying.

The sub-division "Inorganic and Organic Chemistry" will be obligatory on all candidates who select Group C.

To pass in each subject thirty-three per cent. and to take honors sixty-six per cent. of the marks assigned will be required.

5. The degree with honours will be conferred on candidates who obtain three out of the four honors possible, viz :

Certificate with honours (cl. 2.)

Thesis with honours (cl. 3.)

Honours in each subject of examination (cl. 4.)

6. Candidates are required to send to a Registrar of the University at least three weeks before the commencement of the annual or supplemental examinations an application for examination according to a printed form to be obtained from the Registrar, and such application must be accompanied by a fee of ten dollars.
7. The annual examinations for the degree shall be held in April, and the supplemental examinations in September.
8. The fee for the degree shall be ten dollars and shall be paid to the Registrar not later than the day preceding the first day of the annual examinations.
- 9 The ordinary time for conferring the degree shall be at the University commencement in June. The degree may be conferred at any meeting of the Senate.
10. The thesis, drawings, and other papers accompanying them, shall be the property of the School of Practical Science.
11. In case any change shall be made in the conditions referred to in the second clause, such change shall be submitted to the Senate, and shall have no force so far as the said clause is concerned unless approved by resolution of the Senate.

SUBSEQUENT PROFESSIONAL DEGREES.

The attention of graduates is directed to the following statute, passed by the Senate of the University of Toronto in 1896 :

By the Senate of the University of Toronto.

Be it enacted :

- I. That all previous Statutes of the University relating to degrees or diplomas in Engineering be repealed.
- II. That the following degrees be hereby established, viz., Civil Engineer (C.E.), Mining Engineer (M.E.), Mechanical Engineer (M.E.), Electrical Engineer (E.E.).

III. That the following be the conditions and regulations governing the conferring of the said degrees.

1. A candidate for one of the said degrees shall hold the diploma of the School of Practical Science and the degree of Bachelor of Applied Science of the University of Toronto, except in the case provided for in clause 11 hereunder.
2. He shall have spent at least three years after receiving the degree of Bachelor of Applied Science in the actual practice of the branch of engineering wherein he is a candidate for a degree.
3. Intervals of non-employment or of employment in other branches of engineering shall not be included in the above three years. It shall not be necessary that the several periods requisite to make up the said three years be consecutive.
4. Satisfactory evidence shall be submitted to the University examiners as to the nature and length of the candidates' professional experience for the purposes of clauses 2 and 3.

The Examiners shall satisfy themselves by oral or written examinations in regard to the candidate's experience and competence.

5. The candidate shall prepare an original thesis on some engineering subject in the branch in which he wishes a degree; the said thesis to be accompanied by all necessary descriptions, details, drawings, bills of quantities, specifications and estimates.

The candidates may be required at the option of the Examiners to undergo an examination in the subject of this thesis.

6. Notice in writing shall be sent to the Registrar not later than the first day of February, informing him of the degree to which the candidate wishes to proceed and of the title of his proposed thesis for the approval of the Senate.

7. The evidence under clause 4, and the thesis, with accompanying papers, described in clause 5, shall be sent to the Registrar not later than the first day of April.
8. The candidate shall be required to present himself for examination in the month of April at such time as may be arranged by the Registrar.
9. The fee for any one of the said degrees shall be twenty dollars, and shall be paid to the Bursar not later than the first day of April.
10. The thesis, drawings, and other papers submitted under clause 7 shall become the property of the School of Practical Science.
11. Candidates who graduated from the School of Practical Science before June, 1895, shall not be required to hold the degree of Bachelor of Applied Science.
For further particulars apply to the Registrar of the University of Toronto.

For the better carrying out of the provisions of the above statute the following statute constituting the Board of Examiners for professional degrees in Engineering was passed by the Senate on December 14th, 1900.

By the Senate of the University of Toronto.

Be it enacted :

1. That the Examiners for the degrees of Civil Engineer (C.E.), Mining Engineer (M.E.), Mechanical Engineer (M.E.), and Electrical Engineer (E.E.), be appointed at least twelve months in advance of the date of the examinations for which their services are required.
2. That the said Examiners constitute the Board of Examiners for degrees in Engineering.
3. That the members of the Board shall select one of their number to act as chairman within one month from the date of their appointment.

4. That candidates for examination applying to the Registrar for information respecting the nature or details of the examinations for the said degrees, shall be directed by him to communicate with the chairman of the said Board, who shall forward to the candidates either directly or through the Registrar the decision of the Board.
5. That the chairman of the said Board shall keep a record book in which he shall enter the minutes of the proceedings of the Board. He shall also keep a file in book form of all correspondence with candidates for examination and other official correspondence; and shall at the close of the examinations transmit to the Registrar a copy of the said minutes and correspondence.
6. That at the close of the examinations, the Board shall forward a report of the results to the Registrar for transmission to the Senate. The report shall be signed by the Examiners or by the Chairman of the Board on their behalf.
7. That the Registrar shall furnish each Examiner on his appointment with a copy of this statute and a copy of the statute respecting degrees in Engineering.

Extract from the Provincial Act Respecting Land Surveyors and Survey of Lands. (R.S.O.)

“10—(2) Any person serving as an apprentice as hereinafter provided, may, with the permission of the Board of Examiners, attend the Ontario School of Practical Science, or any school, college or university, the course of study which is in the opinion of the Board sufficiently similar to that in the Ontario School of Practical Science, for the purpose of taking any course of study which includes any subject required for the final examination for admission to practice as a land surveyor, but the total period of such apprenticeship and of such course of study shall not exceed the period of four years from the date of the articles of apprenticeship as above mentioned, and not less than three years

of the said period of four years shall be passed in the actual service of a practicing Ontario Land Surveyor.

“14. The privilege of a shorter term of apprenticeship shall also be accorded to any graduate of the Royal Military College at Kingston and of the Ontario School of Practical Science in civil or mining engineering, or of the McGill College, Montreal, in civil or mining engineering, and such persons shall not be required to pass the preliminary examinations hereinbefore required for admission to apprenticeship with a land surveyor, but shall only be required to serve under articles with a practicing land surveyor duly filed as required by section 17 of this Act, during twelve successive months of actual practice, after which, on complying with all the other requirements, he may undergo the examination by the Act prescribed.

“(2) Such person at any time during his examination may, with the permission of the Board of Examiners, attend the Ontario School of Practical Science, or any school, college or university, the course of study of which is, in the opinion of the Board, sufficiently similar to that in the Ontario School of Practical Science, for the purpose of taking any course of study which includes any subject required for the final examination for admission to practice as a land surveyor, but the total period of such apprenticeship, and of such course of study, shall not exceed the period of two years from the date of the articles of apprenticeship as above mentioned, and not less than twelve months of the said period of two years shall be passed in the actual service of a practicing Ontario Land Surveyor.”

Extract from the Dominion Lands Act.

“Every graduate in surveying of the Royal Military College of Canada, and every person who has followed a regular course of study in all branches of education required by this Act for admission as a Dominion Land Surveyor, through the regular sessions, for at least two years in any College or University where a complete course of theoretical and practical instruction in surveying is organized, and who has thereupon received from Col-

lege or University a Diploma as Civil Engineer, shall be exempt from serving three years as aforesaid, and shall be entitled to examination after one year's service under articles with a Dominion Land Surveyor, at least six months of which service has been in the field, on producing the affidavit required by the next preceding clause as to such service; but it shall rest with the Board to decide whether the course of instruction in such College or University is that required by this clause."

The attention of the candidates for the Diploma of D.T.S. given by the Dominion Board of Examiners, is directed to the facilities afforded for preparation in the School.

Extract from the Ontario Architects Act.

"Any student who has matriculated in Arts in any University in His Majesty's dominions, or in the Ontario School of Practical Science, shall not be required to pass the preliminary examinations.

"23. Any person who applies for admission to registration as an architect after the coming into force of this Act, shall be not less than twenty-one years of age, shall have served as a student not less than five years with a principal or principals entitled to register under this Act, or with any other principal or principals approved by the council, and have passed such qualifying examinations as may be required by this Act.

"24.—(3) Any person who has graduated from the Ontario School of Practical Science shall be required to serve only three years as a student, one of which three years may be served during the vacation of such school.

"(4) Upon and after the passing of this Act, students shall serve such term as is required to be served by the provisions of this Act, under indenture to be a registered architect, which indenture and any assignment thereof with affidavit of execution thereto attached shall be filed with the Registrar upon payment of such fees as the council may by regulation direct.

SYNOPSIS OF THE COURSES OF LECTURES AND PRACTICAL INSTRUCTION.

Subjects Taught by the Faculty of the School.

Subjects.	Instructors.
Organic and Inorganic Chemistry, Applied Chemistry, Assaying.	W. H. Ellis, M.A., M.B., Professor. J. W. Bain, B.A.Sc., Lecturer. E. G. R. Ardagh, B.A.Sc., Demonstrator. E. Wade, Grad. S.P.S. Fellow. S. Dushman, B.A. Fellow.
Geology, Metallurgy, Mining and Ore-dressing, Milling, German,	A. P. Coleman, M.A., Ph. D., Professor. G. R. Mickle, B.A., Lecturer. J. G. McMillan, B.A.Sc., Fellow.
Dynamics, Strength of Materials, Theory of Construction, Machine Design, Theory of Mechanism, Compound Stress, Hydraulics, Thermodynamics, and Theory of the Steam Engine,	J. Galbraith, M.A., LL.D., Professor. J. McGowan, B.A., B.A.Sc., Lecturer. R. W. Angus, B.A.Sc., Lecturer. H. G. McVean, B.A.Sc., Demonstrator. P. Gillespie, B.A.Sc., Demonstrator.
French, Statics, Drawing, Architecture, Plumbing, Heating and Ventila- tion, Mortars and Cements,	C. H. C. Wright, B.A.Sc., Professor. J. R. Cockburn, B.A.Sc., Demonstrator. A. E. Gibson, B.A.Sc., Fellow. J. A. McFarlane, B.A.Sc., Fellow. M. R. Riddell, Grad., S.P.S., Fellow.
Brick and Stone Masonry, Surveying, Geodesy and Astronomy, Spherical Trigonometry, Least Squares, Descriptive Geometry,	L. B. Stewart, D.T.S., Professor. J. L. R. Parsons, B.A., Fellow. N. D. Wilson, B.A.Sc., Fellow.

Subjects taught by the Faculty of the School.—*Continued.*

Subjects.	Instructors.
Electricity, Magnetism, Dynamo-Electric Machinery, Mechanics of Machinery,	T. R. Rosebrugh, M.A., Professor. H. W. Price, B.A.Sc., Demonstrator. H. G. Smith, B.A.Sc., Fellow. G. J. Manson, Grad., S.P.S., Fellow.
Sound, Light, Heat, Hydrostatics,	G. R. Anderson, M.A., Lecturer.

Subjects Taught by the Faculty of the University.

Algebra, Euclid, Plane Trigonometry, Analytical Geometry, Calculus, Astronomy,	Alfred Baker, M.A., Professor. A. T. DeLury, B.A., Associate Professor. J. C. Fields, B.A., Ph.D., Associate Professor. M. A. McKenzie, M.A., Associate Professor. J. G. Parker, B.A., Fellow.
Biology, Mineralogy, Petrography, Chemistry,	R. Ramsay Wright, M.A., LL.D., Professor. W. R. Lang, D.Sc., Professor. T. L. Walker, M.A., Ph.D., Professor. W. L. Miller, B.A., Ph.D., Associate Professor. W. Parks, B.A., Ph.D., Lecturer. F. B. Kenrick, M.A., Ph.D., Lecturer. F. B. Allan, M.A., Ph.D., Lecturer. W. H. Collins, B.A., Class Asst. H. I. Kerr, B.A., Class Assistant.

DRAWING.

Model drawing, machines and structures, map and topographical drawing, designs and estimates, graphical calculations.

Descriptive geometry, including practical geometry (plane and solid); orthographic, oblique and perspective projections; intersection of surfaces, shades and shadows, stone cutting, theory of mechanism, theory of mapping, etc.

Text Books and Books of Reference.

Angel—Plane and Solid Geometry.

Binn —Orthographic Projection.

Church—Descriptive Geometry.

Davidson—Projections.

Low—Machine Drawing and Design.

Millar—Descriptive Geometry.

MacCord—Lessons in Mechanical Drawing.

Reinhardt—Lettering for Draughtsmen, Engineers and Students.

Vere Foster—Copy Book No. 10.

Warren—Stone Cutting.

Worthen—Topographical Drawing.

SURVEYING AND LEVELLING.

LAND SURVEYING.

Chain Surveys.

Compass and theodolite surveys.

Method of keeping field notes.

Determination of heights and distances.

Plotting.

LEVELLING.

Longitudinal and cross sections. ,

Plotting.

SETTING OUT.

Setting out straight lines and curves.

Setting out levels.

MENSURATION.

Lines, surfaces and solids.

Timber, masonry, iron and earthwork.

Capacity of reservoirs, etc.

Lectures are also given on the distinctive features of Mining and Hydrographic Surveying.

Text Books.

Brough—Mine Surveying.

Gillespie—Higher Surveying.

Henck or Searle—Railway Curves.

Johnson—Theory and Practice of Surveying.

Murray—Manual of Land Surveying.

PRACTICAL ASTRONOMY AND GEODESY.

ORDINARY COURSE.

The work included in this course is sufficient to fulfill the requirements of the final examination for Ontario and Dominion land surveyors.

In astronomy the principal subjects are the determination of time, latitude and azimuth, and the general principles of the method of determining longitude. Practical instruction is given in the methods of taking observations.

In geodesy all surveys, computations and methods of map construction are based upon the requirements of secondary triangulation.

ADVANCED COURSE (Fourth Year).

The work of this course is intended to fulfill the requirements of the final examinations for Dominion Topographical Surveyors. It is distinguished from the work of the ordinary course not so much by the subjects as by the degree of refinement to which the investigations are carried.

In geodesy the requirements of primary triangulation are kept in view.

Text Books.

- Chauvenet—Spherical and Practical Astronomy.
 Doolittle—Practical Astronomy.
 Gillespie—Higher Surveying.
 Gore—Elements of Geodesy.
 Green—Spherical and Practical Astronomy.
 Helmert—Hohere Geodasie.
 Nautical Almanac, 1906.

APPLIED MECHANICS.

STATICS.

The calculation of the stresses in framed structures, solid and riveted beams, arches, etc. Both graphical and analytical methods used.

THEORY OF THE STRENGTH AND ELASTICITY OF MATERIALS.

THEORY OF COMPOUND STRESS.

DESIGNING OF STRUCTURES in timber, iron and masonry—arches, retaining walls, roofs, bridges, etc.

DYNAMICS.

Representation and measurements of forces and motions.

Principles of work and energy.

Efficiency of machine. Friction.

Transmission of energy—belts, shafts, crank and connecting rod, etc.

Fly-wheels, governors.

Balancing of machinery, etc., etc.

STRENGTH OF THE PARTS OF MACHINES.

MACHINE DESIGN.

HYDRAULICS.

Discharge of water through orifices, notches, etc. Flow in pipes and open channels. Sewerage, water-works, water-power, water-wheels, turbines, pumps, etc.

THERMODYNAMICS AND THEORY OF THE STEAM ENGINE.

Text Books and Books of Reference.

- Baker—Masonry Construction.
Billings—Heat and Ventilation.
Bodmer—Hydraulic Motors, Turbines, etc.
Cambria Steel.
Carnegie Pocket Companion.
Carpenter—Heating and ventilation of Buildings.
Carpenter—Experimental Engineering.
Du Bois—Graphic Statics.
Du Bois—Strains in Framed Structures.
Foster—Electrical Engineers' Pocket Book.
Gerhardt—House Drainage and Sanitary Plumbing.
Greene—Trusses and Arches.
Innes—Centrifugal Pumps, Turbines and Water Motors.
Johnson—Modern Frame Structures.
Johnson—Materials of Construction.
Kennedy—Mechanics of Machinery.
Kent—Mechanical Engineer's Pocket Book.
Ketchum—Steel Mill Buildings.
Kidder—Building Construction and Superintendence.
Kidder—Architect and Builder's Pocket Book.
Lanza—Applied Mechanics.
Low and Bevis—Machine Drawing and Design.
Low—Machine Drawing.
Merriman and Jacoby—Roofs and Bridges.
Merriman—Mechanics of Materials.
Merriman—Hydraulics.
Patton—Foundations.
Peabody—Thermodynamics.
Peabody—Steam Tables.
Rafter and Baker—Sewage Disposal in the United States.
Rankine—Applied Mechanics.

Reuleaux—The Constructor.

Santo Crimp—Sewage Disposal Works.

Shann—Elementary Treatise on Heat.

Trautwine—Engineer's Pocket Book.

Unwin—Elements of Machine Design.

Unwin—Testing of Materials of Construction.

Von Ott—Graphic Statics.

Williamson—Elasticity.

THEORY OF MECHANISM.

Principles of the transmission of motion without reference to force.

Pitch surfaces, spur wheels, bevel wheels, skew-bevel wheels, trains of wheelwork, teeth of wheels, cams, cranks, eccentrics, links, bands and pulleys, hydraulic connections, frictional gearing, link motion for slide valves, etc.

Text Books and Books of Reference.

Auchincloss—Valve and Link Motions.

Goodeve—Elements of Mechanism.

Halsey—Slide Valve Gears.

Kennedy—Mechanics of Machinery.

Rankine—Machinery and Millwork.

Reuleaux—Kinematics and Machinery.

ELECTRICITY.

Instruction is given in this subject by a course of lectures and also by work in the laboratories of the School.

The work comprises :—

INTRODUCTORY COURSE.

Lectures treating the principles of magnetism, electrostatics, electromagnetism and current electricity in an elementary manner.

Lectures on electric circuits, wiring and distribution by feeders.

Short laboratory course.

ELECTRICAL MEASUREMENTS.

Lectures and laboratory work on electrical measurements; including various cases of resistance measurement, comparison of standards of resistance, measurement of electromotive force, standard cells, current measurements, applications to calibration of electrical measuring instruments, photometry and properties of incandescent lamps, location of faults.

DYNAMO ELECTRIC MACHINERY.

Electromagnetism and theory of direct current dynamo-electric machinery.

Laboratory work on the magnetic field of the earth, tangent galvanometer, induction and hysteresis in iron, Hopkinson's Law, ballistic galvanometer and condenser, arc lamps, fusing currents, insulation and disruption tests of dielectrics, brush contact resistance, magnetization and load curves, characteristics of shunt, series and compound wound dynamos, motor characteristics, brake test, stray power loss and efficiency, armature reaction, dispersion coefficient, temperature rise.

Armature windings, thermal and electro magnetic relations, design.

Alternating current machinery and circuits. Laboratory work including measurement of inductance, calibration of A. C. instruments, wave tracing, phase relations, transformer impedance, core loss, efficiency and regulation, alternator characteristics, motor tests, measurement of power in polyphase circuits, constant current transformer, series A. C. arc lamps, photometry of incandescent and Nernst lamps.

ADVANCED COURSE (Fourth Year).

Applications of vectors and complex quantities in the theory of alternating currents, the alternator single phase and polyphase. Theory of the synchronous motor, rotary converter and induction motor. The transformer and combination of transformers. Theory of polyphase power transmission. Operation of long lines considering distributed capacity, resistance and inductance. Experimental inspection of calculations and determination of characteristics of alternator synchronous motor, single phase and polyphase induction motors, and other practical problems.

The above courses may all be taken by students in Mechanical and Electrical Engineering who take the "electrical option." Shorter courses are also arranged for students in other departments.

Text Books and Books of Reference.

- Bedell and Crehore—Alternating Currents.
Bedell—Principles of the Transformer.
Bell—Electric Power Transmission.
Carhart and Patterson—Electrical Measurements.
Ewing—Magnetic Induction in Iron.
Fleming—Alternate Current Transformers, Vols. I. and II.
Franklin and Williamson—Alternating Currents.
Hooper and Wells—Electrical Problems.
Jackson—Electromagnetism and the Construction of Dynamos.
Kempe—Electrical Testing.
Loudon and McLennan—Practical Physics.
Parshall and Hobart—Armature Winding.
Parshall and Hobart—Electric Generators.
Raymond—Alternating Current Engineering.
Ryan, Norris and Hoxie—Text book of Electrical Machinery.
Steinmetz—Elements of Electrical Engineering.
Steinmetz—Alternating Current Phenomena.
Stewart and Gee—Practical Physics.

- Thompson, S. P.—Dynamo Design.
 Thompson, S. P.—Elementary Electricity and Magnetism.
 Thompson, S. P.—Dynamo Electric Machinery.
 Thompson, S. P.—Polyphase Currents.
 Wiener—Dynamo Electric Machines.

ARCHITECTURE.

HISTORY OF ARCHITECTURE.

- Egyptian, Assyrian and Persian.
 Classic.
 Romanesque and Byzantine.
 Gothic.
 Renaissance.

ORDERS OF ARCHITECTURE.

HISTORY OF ORNAMENT.

PRINCIPLES OF DECORATION.

PRINCIPLES OF PLANNING.

ELEMENTS OF DESIGN.

Text Books and Books of Reference.

- Fergusson—History of Architecture.
 Fletcher—A History of Architecture.
 Gwilt—Encyclopaedia of Architecture.
 Leeds—Orders of Architecture.
 Osborne—Art of House Planning.
 Owen Jones—Grammar of Ornament.
 Racinet—L'Ornement Polychrome.
 Rickman—Gothic Architecture.
 Sharpe—Seven Periods of Church Architecture.
 Smith, T. Roger—Classic and Early Christian Architecture.
 Smith, T. Roger—Gothic and Renaissance.
 Stratham—Architecture for General Readers.
 Sturgis—European Architecture.
 Vignole—The five Orders of Architecture.

MATHEMATICS.

The pure Mathematics included in this course is taught by the Faculty of Arts.

EUCLID.

ALGEBRA.

PLANE TRIGONOMETRY.

ANALYTICAL GEOMETRY.

CALCULUS.

PLANE ASTRONOMY.

Text Books and Books of Reference.

Hall and Knight—Plane Trigonometry.

Loomis—Calculus.

Mackay—Elements of Euclid.

Newcombe and Holden—Astronomy.

Osborne—Calculus.

C. Smith—Conic Sections.

Todhunter—Algebra.

Todhunter—Spherical Trigonometry.

PHYSICS.

OPTICS.

Laws of reflection and refraction.

Optical constants of mirrors, lenses, etc.

Theory of optical instruments.

HYDROSTATICS.

Laws of fluids at rest.

Hydrostatic machines.

Buoyancy.

HEAT.

Thermometry and calorimetry.

Coefficients of expansion.

Mechanical equivalent.

ACOUSTICS.

Mode of propagation and velocity of sound.

Laws of vibrating bodies.

Architectural acoustics.

Text Books and Books of Reference.

Edser—Light.

Edser—Heat.

Glazebrook—Heat.

Glazebrook—Light.

Glazebrook—Hydrostatics.

Tyndall—Sound.

Hastings and Beach—General Physics.

Deschanel—Principles of Physics.

Ames & Bliss—Manual of Experiments in Physics.

Lummer—Photographic Optics.

Preston—Theory of Heat.

Preston—Theory of Light.

Poynting and Thomson—Sound.

CHEMISTRY.

COURSES IN THE SCHOOL OF PRACTICAL SCIENCE.

Inorganic and Organic chemistry.

Applied chemistry.

The chemistry of combustion, fuels, furnaces, artificial lighting, explosives, photography, building materials, water, air, sewage, chemical manufactures.

Laboratory work, including technical analysis, the analysis of food, water and air, and toxicology.

COURSES IN THE UNIVERSITY OF TORONTO.

Organic chemistry.

Chemical theory.

Physical chemistry.

Text Books and Books of Reference.

- Allen—Commercial Organic Analysis.
Arnold—Steel Works Analysis.
Beilstein—Organic Chemistry.
Beringer—Text Book of Assaying.
Blair—Chemical Analysis of Iron and Steel.
Blount—Electro-Chemistry.
Bloxam—Chemistry.
Bloxam and Blount—Chemistry for Engineers and Manufacturers.
Blyth, A. W.—Poisons.
Blyth, A. W.—Foods.
Bolley—Handbuch der Chemischen Technologie.
Dammer—Handbuch der Anorganischen Chemie.
Douglas and Johnston—Qualitative Analysis.
Fresenius—Qualitative and Quantitative Analysis.
Furman—Manual of Practical Assaying.
Hempel—Gas Analysis.
Holleman—Inorganic Chemistry.
Holleman—Organic Chemistry.
Jones—Practical Chemistry.
Lord—Notes on Metallurgical Analysis.
Lunge—Sulphuric Acid and Alkali.
Lunge—Coal Tar and Ammonia.
Meyer—History of Chemistry.
Miller—Quantitative Analysis for Mining Engineers.
Miller and Smale—Qualitative Analysis.
Morgan—Elements of Physical Chemistry.
Newth—Manual of Chemical Analysis.
Noyes—Qualitative Chemical Analysis.
Ostwald—Lehrbuch der Allgemeinen Chemie.
Ostwald—Outlines of General Chemistry.
Ostwald—Principles of Inorganic Chemistry.
Pattison Muir—Thermochemistry, Elements of.
Perkin—Qualitative Analysis.
Perkin and Kipping—Organic Chemistry.
Poole—Calorific value of Fuels.
Post—Chemisch-technische Analyse.

- Remsen—Inorganic and Organic Chemistry.
 Richter—Inorganic and Organic Chemistry.
 Roscoe and Schorlemmer—Treatise on Chemistry.
 Sadtler—Organic and Applied Chemistry.
 Sutton—Volumetric Analysis.
 Thorp—Outlines of Industrial Chemistry.
 Thorpe—Dictionary of Applied Chemistry.
 Thorpe—Quantitative Analysis.
 Treadwell—Lehrbuch der Analytischen Chemie.
 Wagner—Chemical Technology.
 Walke—Lectures on Explosives.
 Watt—Dictionary of Chemistry.
 Wiechman—Sugar Analysis.
 Winkler—Gas Analysis.

ELECTROCHEMISTRY.

Text Books and Books of Reference.

- Arrhenius—Lehrbuch der Elektrochemie.
 Blount—Electro chemistry.
 Borchers—Electric Smelting and Refining.
 Dolezalek—The Accumulator.
 Elbs—Electrolytic Preparations.
 Jaeger—Normalelemente.
 Le Blanc—Electro chemistry.
 Lehfelddt—Electro chemistry.
 Liebetanz—Calciumcarbid and Acetylen.
 Lorenz—Elektrochemisches Praktikum.
 Luepke—Elements of Electro chemistry.
 Minet—Gewinnung des Aluminiums.
 Moissan & Lenher—The Electric Furnace.
 Oettel—Electrochemische Übungsaufgaben.
 Wade—Secondary Batteries.

MINERALOGY, GEOLOGY AND METALLURGY.

1. Mineralogy and Geology.
 - Geology and Palaeontology.
 - Mineralogy and crystallography.
 - Petrography.

Physical geography.

Blowpipe analysis.

Determinative mineralogy.

2. Mining and Metallurgy.

Mining Geology.

Ore dressing.

Metallurgy of iron and steel.

Metallurgy of gold, silver, copper, nickel, etc.

Assaying.

Milling.

Text Books and Books of Reference.

Chapman or Brush—Mineral Tables.

Chapman—Mineralogy and Geology of Canada.

Crosby—Determination of Minerals.

Dana—Manual of Geology.

Dana—Minerals and how to study them.

Dana—Text Book of Mineralogy.

Furman—Assaying.

Geikie—Text Book of Geology.

Harker—Petrography for Students.

Howe—Metallurgy of Steel.

Ihlseng—Manual of Mining.

Kemp—Handbook of Rocks.

Kemp—Ore Deposits of the United States.

Kuhnhardt—Ore Dressing.

Nicholson—Palaeontology.

Peters—Modern Copper Smelting.

Phillips—Ore Deposits.

Phillips and Bauerman—Elements of Metallurgy.

Plattner—Manual of Blowpipe Analysis.

Roberts-Austen—Matallurgy.

Rose—Metallurgy of Gold.

Rosenbusch—Petrography.

Williams—Crystallography.

THERMODYNAMIC LABORATORY.

The thermodynamic laboratory contains a 50-horse power Brown engine. The engine was constructed especially for experimental investigations, and the cylinder has steam jackets on the body and both ends, arranged so that any or all of them may be used at once, or that all may be shut off as desired. The exhaust steam may be passed through a feed-water heater to the open air, or to a jet condenser or to a Wheeler surface condenser, the latter of which was kindly presented to the School by the inventor, Mr. F. M. Wheeler, of New York.

A compound Willans has recently been installed as a part of this laboratory. This engine is so arranged that it may be run condensing or non-condensing and it may also be converted into a simple engine if desired, thus allowing considerable latitude in the way of experimental work.

A De Laval turbine has also been placed in the laboratory, and is arranged with two alternative exhausts, directly to the atmosphere and to a surface condenser, suitable nozzles being provided for either purpose.

There are also a Blake circulating pump, a Knowles air pump, and a Blake feed pump, which was a gift of the manufacturers. Several injectors of various types are also available for experimental work and examination.

The steam for the plant is supplied by a Babcock & Willcox boiler, and a Harrison-Wharton boiler.

An Otto gas engine completes the experimental equipment of this laboratory. There are, in addition, the usual measuring instruments required in thermodynamic investigations, among which may be mentioned indicators of various types, gauges, gauge testing apparatus, calorimeters, both throttling and separating, scales, brakes, dynamometers, anemometers, thermometers, a platinum and platino-rhodium thermo-couple, and other instruments.

HYDRAULIC LABORATORY.

This laboratory contains two large steel tanks arranged for the experimental study of the flow of water through orifices and over weirs. Both orifices and weirs may be conveniently changed.

The discharge is measured by two tanks which are filled and emptied alternately by means of four valves operated by a single lever, thus enabling the measuring to be continued for any length of time without interrupting the flow.

The water is supplied by a new centrifugal pump of latest design and construction. This pump is so designed that it will give a discharge of 1,000,000 gallons per 24 hours, or it may be arranged to give half the discharge against double the head. In addition to being useful as a pump to supply water for the hydraulic work it forms an excellent piece of laboratory equipment and is so arranged that experiments may be made on it as to discharge and efficiency under varying conditions of speed and head.

For the work on turbines, etc., a six-inch New American turbine, the gift of the firm of William Kennedy & Sons, Owen Sound, has been set up so that efficiency determinations under different gate openings and heads may be made. In addition to this a thirty-six inch axial impulse turbine, and a Pelton wheel, each being provided with suitable brakes, means of accurately measuring the discharge continuously, and other requirements for experimental work have been installed. There are also three centrifugal pumps, one made by the Morris Machine Works, another which has been kindly presented to the School by the Northey Co., Limited, Toronto, the manufacturers, and a third which has been specially designed and built for a more careful line of experimental work than is possible with the ordinary commercial pump of this class. A dynamometer and other necessary apparatus are provided for adapting these pumps to scientific investigations.

A Venturi meter has also been installed, and apparatus has been arranged so that the discharge from different forms of nozzles, and the frictional losses in elbows, valves, etc., may be determined.

There are the usual measuring instruments, gauges, gauge-testing apparatus, scales, brakes and dynamometers, and a nine-inch McCormick turbine.

STRENGTH OF MATERIALS LABORATORY.

The machines in this department are the following :

An Emery 50-ton machine, built by William Sellers & Co., of Philadelphia, for making tests in tension and compression.

A Riehle 100-ton machine for making tests in tension, compression, shearing and cross-breaking. It will take in posts twelve feet long and beams up to eighteen feet in length.

A Riehle 10-ton universal testing machine.

An Olsen torsion machine for testing the strength and elasticity of shafting. This machine will twist shafts up to sixteen feet in length and two inches in diameter.

A Riehle transverse testing machine of 5,000 pounds capacity adapted to specimens up to 48 inches in length.

A Riehle abrasion machine, for testing the resistance to attrition of stones, brick, etc.

Extensometers of the Bauschinger, Unwin, Marshall and other types, besides a large number of micrometers and scales.

The shop is equipped with a number of high-class machine tools specially fitted for reducing the specimens to the requisite shapes and dimensions with a minimum of hand labor. It is also supplied with the necessary appliances for making ordinary repairs and for making special apparatus for original investigations.

CEMENT TESTING LABORATORY.

This department is fitted with all the usual moulds, gravimeters, tables and tank accommodation necessary in a well equipped laboratory.

In this laboratory there are also the following :

A Riehle 2,000 pounds machine, fitted for either tension or compression.

A Riehle 600-pounds machine fitted for tension only.

An extra large Faija's hot bath apparatus.

METEOROLOGICAL LABORATORY.

In the geodetic and astronomical departments are a 100-foot and a 66-foot standard of length; a 10-foot Rogers comparator, with a graduating attachment; a Kater's pendulum with a vacuum chamber; a Howard astronomical clock and electro-chronograph; a sidereal chronometer, a zenith telescope, a Troughton & Simms 10-inch theodolite, a level trier, thirteen surveyor's transits, ten levels, compasses, sextants, plane tables, micro-meters, planimeters, etc.; and all the necessary field instruments.

ELECTRICAL LABORATORY.

In one section of this laboratory a 20 kilowatt Edison motor furnishes power to drive several continuous current dynamos, series, shunt and compound wound, bipolar and multipolar, a Westinghouse experimental alternator, and a rotary converter when used as a polyphase dynamo. Of direct current motors, besides the one already mentioned, there are a Crocker-Wheeler machine and a 6 h. p. Edison motor, used in the mill-room, but available for testing; besides fan motors. Of alternating current motors there are a General Electric three-phase induction motor and a single-phase induction motor with condenser compensator, besides a special experimental polyphase induction motor of $7\frac{1}{2}$ h. p., by the same company, in which the rotor terminals are all separately accessible. A revolving field for the latter machine makes it a general form of polyphase generator. There are also a Wagner single phase induction motor and a G. E. constant current transformer with a series of six arc lamps. Other types are represented by fan motors. A marble switchboard in this room facilitates connection between different circuits, both locally and for other parts of the building. It is supplied with 110 and 220 volts, direct current, and the same voltage of alternating current of sixty cycles from the city circuits, in addition to the range of supply that may be had from our own generators and storage cells. Four switches which may be connected in any of the circuits, two sets of bus-bars for paralleling, automatic circuit breakers, arc and incandescent lamp circuits; and controlling rheostats are also connected to the switchboard.

Another section is the galvanometer room, in which are ten masonry piers to support instruments in such a way as to be free of vibration.

An adjoining room is the laboratory for advanced work, in which may be mentioned a Kelvin Balance and its rheostat, and an enclosure within which experiments with high voltages may be safely performed. Marble switchboards are placed in this room, and in the galvanometer room to connect with "Chloride" storage batteries of large and small cells located on a galley in a separate room, and apparatus for convenience in standardizing measuring instruments is available.

Among the instruments and apparatus may be mentioned : Numerous D'Arsonval galvanometers of Carpentier, Rowland and other designs, ballistic galvanometers, a Thomson galvanometer, telescopes and scales, divided microfarad condenser, Kempe discharge key, rheostats and proportional arms for Wheatstone bridge and other purposes, slide wire metre bridges, including special bridge for electrolytic resistance; standard resistances, including megohm, 10 ohms, several copies of the ohm, divided ohm, and a complete set of standards from one hundred thousand ohms down to one-thousandth ohm, certified copies of the ohm, divided ohm, and a complete set of standards from the Charlottenburg Reichsanstalt, the latter with oil bath and stirrer; Willoughby potentiometer, standard cells, Clark and Helmholtz, Kohlrausch tubes for measurement of electrolytic resistance, Lippmann electrometers, Kelvin-Mascart electrometer, Nerst electrometer. Besides these are numerous Weston instruments, including wattmeters, voltmeters for direct and alternating currents, ammeters and milliammeters, Thomson and Whitney ammeters and voltmeters, three Siemens electro-dynamometers, Kelvin balance, Kelvin high potential electrostatic voltmeter, and electrostatic multicellular voltmeter; Thomson recording wattmeters (including one for three phase), Shallenberger recording ammeter; lightning arresters, Westinghouse, Stanley, Wagner and Thomson-Houston transformers; a General Electric 10,000 volt testing transformer, and a low voltage 1,000 ampere transformer, high potential condenser, Wimshurst influence machine, Ruhm-

korff coils, Crookes tubes, fluoroscope, Braun tube, wireless telegraph apparatus; Hopkinson permeameter for testing the magnetic qualities of iron, instruments for measuring instantaneous current and voltage in alternating current circuits according to Duncan, Fessenden contact maker, earth inductor, Ayrton and Perry secohmmeter, fixed and variable standards of inductance, double sets of telegraph and telephone apparatus; Lummer-Brodhun and Bunsen photometers with accessories for arc and incandescent light photometry and Hefner standard amylnacetate lamp. Voltmeters of all the usual forms, balances, thermometers, portable rheostats and numerous minor appliances complete this portion of the equipment. Among the arc lights may be mentioned the Manhattan, Upton, Adams-Bagnall, Törring, Thomson, Safford and United Electric long burning enclosed arcs, Thomson and other lamps for alternating current, the Ward and Universal (two in series of 110 volt circuits), Thomson-Houston and Ball for series circuits and one the gift of W. A. Turbayne.

MINERALOGICAL LABORATORY.

Provision is made for the introduction of first and second year students to the study of the more important minerals, by actually determining for themselves the chief physical and morphological properties of these minerals. Special laboratories for the study of blow-pipe analysis and determinative mineralogy are available for the use of second and third year students.

Special sets of rocks are arranged for the use of students of the second year, while the more advanced work in this subject is amply provided for in the laboratories for the preparation and study of thin sections of rocks, and for the chemical analysis of minerals and rocks.

Among the collections of specimens is the Ferrier Mineral Collection, arranged systematically and exposed in glass cases so as to be always available for the use of students as a type or reference collection.

ASSAYING LABORATORIES.

Two assaying laboratories are situated in the basement of the Chemistry and Mining building, one has a floor space of 17 ft. x 47 ft. and the other 28 ft. x 37 ft., adjoining each is a room 15 ft. x 11 ft. with the necessary equipment for the wet work in connection with assaying. Common to both laboratories is a balance room furnished with gold balances set on a concrete pier. Each of the laboratories contains a number of melting holes (18 in all) for crucible fusions, various gas furnaces both for crucibles and mufflers, and a large brick muffle furnace.

The furniture comprises lockers for the students, tables for the pulp balances and the necessary cabinets and shelving.

Adjoining the assay laboratories is a preparation room (19 ft. x 13 ft.) which is equipped with a motor, crusher, pulverizer, sample grinder and all the necessary hand pulverizers, screens, etc., for preparing ores for assay.

MILLING PLANT.

A detached building contains the milling and concentrating equipment. It is heated, lighted and supplied with power from the main building and is divided into five rooms. The mill room is 53 ft. by 72 ft. in area and 22 ft. high and the equipment already installed and working consists of a 15 h.p. motor, a five stamp battery erected on concrete foundation, Challenge ore Feeder, amalgamating plates, and a Wilfley table for concentration, a clean-up pan, steel settling tanks, a steel tank suspended from the roof girders to furnish a constant supply of water, and a track with travelling crawl to transport ore. The machinery was furnished and erected by the Wm. Hamilton Manufacturing Co. of Peterboro.

The other rooms in the building are a store room for ore, which also contains a 30 h. p. motor to drive the machinery in the next room which is devoted to crushing of ores, preparatory to their treatment in the milling room, and is equipped with a gyrating crusher of Hadfield's make, a set of Hamilton rolls 16

inches by 12 inches, platform scales for weighing ore and a jib crane, buckets, pulleys, etc., for handling the rock. The area of this room is 476 square feet.

The other two rooms each 17 ft. by 15 ft. will be used for future additions.

The mill-room affords the student an excellent opportunity of studying milling, as all the machines in use are of the same construction as those employed in the best large mills.

Two other rooms have been fitted up with a large brick assay furnace, and a reverberatory furnace for roasting sulphide and arsenical ores; leaching vats for treating ores by the cyanide process, and a chlorination barrel.

PHYSICAL LABORATORIES.

The Optical laboratory is equipped with optical benches and accessories for determining the optical constants of mirrors, lenses and lens combinations and for demonstrating the construction and use of telescopes, field glasses, microscopes, etc. There is also a full equipment of optical instruments including telescopes, microscopes, field glasses, comparators, spectrometers, saccharimeters, refractometer, level tester, photometer, focometer, dynameter, cathetometer and cameras, a Newton lantern for microscopic projection in ordinary and polarized light, and a Thompson lantern for projection by transmission and reflection.

The Hydrostatic laboratory contains a supply of various forms of hydrometers, hydrostatic balances, Jolly balance, Mohr's balance, vacuum pumps, gauges, etc.

The Heat laboratory is equipped with a full supply of calorimeters and accessories for determinations of latent and specific heat. There is also a steam boiler and jacketed tubes for determinations of the expansion of metal rods, air thermometer, apparatus for verification of Boyle's Law and pressure and boiling point curve and for determination of the absolute expansion of mercury, Nichol's modification of Rowland's calorimeter for determination of Mechanical Equivalent of heat, the work being supplied by an electric motor.

The Acoustical laboratory is provided with Sonometer, siren, forks ordinary and electric, Lissajons' and Melde's apparatus, organ pipes of various forms, Manometric flame apparatus and a special equipment for work in Architectural acoustics consisting of torsion chronograph, electro-pneumatic wind chest and standardized organ pipes and other accessories.

CHEMICAL LABORATORIES.

The Chemical laboratories are situated in the western half of the new Chemistry and Mining building on the first and second floors. The rooms are large and well-lighted and are supplied with the usual modern equipment.

The first and second year laboratory for qualitative work has accommodation for 112 students, each working space being supplied with water, gas and fume cupboard. The third and fourth year laboratory for quantitative analysis will accommodate 36 students, and is supplied with commodious fume cupboards and all necessary apparatus. A laboratory with working places for 24 is provided for the students engaged in the study of technical chemistry; is it equipped with appliances for the preparation and testing of chemical products. Each of these laboratories has its own balance room adjoining, furnished with instruments from the best makers and adapted to the particular objects in view.

In addition there are rooms set apart for gas analysis, electrolytic analysis, calorimetry and a specially constructed fireproof laboratory for combustion, crucible and bomb furnaces. Each of these laboratories is supplied with apparatus of the most approved design, providing excellent facilities for the prosecution of work in analytical and technical chemistry.

MUSEUMS.

The Geological Museum includes collections of minerals, rocks and fossils. There is a large general collection of minerals classified in the usual manner, and intended for comparison and reference in advanced classes; but special attention is paid to the extensive collection of Ontario minerals, which, with few

exceptions, contains all the specimens known in the Province, and is particularly rich in examples of economic minerals. The Ontario collection is constantly being added to, and is believed to be as complete as any in the Dominion.

Adjoining the mineral collection is a series of ores of all descriptions. Particular prominence is given to the gold and silver ores of Canada, especially the Ontario gold ores.

The rocks also are arranged in two collections, one a large general collection from foreign localities, containing massive schistose and sedimentary rocks; the other, a set of Canadian rocks, especially complete in typical country rocks from important ore deposits. An extensive set of thin sections enables advanced students to study both rock collections microscopically.

The palaeontological collection consists of fossils and casts, including the chief typical forms needed for determining the age of sedimentary rocks.

A number of wall cases have been prepared for a collection of specimens illustrating industrial chemistry, and a beginning made towards arranging the materials on hand.

In a separate room there is an interesting collection of dressed building and ornamental stones from various parts of Ontario, serving as illustrations in the architectural department.

LIBRARY.

The library is supplied with a number of the more important scientific and technical periodicals. A valuable collection of works of reference in the subjects of study pursued in the School has been formed and is being added to year by year.

List of Donors to the Library.

- American Society of Civil Engineers—Proceedings.
- Association of Engineering Societies—Journal.
- Blackwood, A. E.—Stone.
- Bureau of Mines—Report.
- Canadian Mining Institute—Journal.

Columbian University—Quarterly.

Department of Mines, Nova Scotia—Report.

Geological Survey of Canada—Report.

Gzowski, Estate of the late Sir Casimir—

Transactions of American Society of Civil Engineers,
1874-1898.

Transactions of Canadian Society of Civil Engineers, vol.
I., 1877—vol. XII., 1898.

Proceedings of The Institution of Civil Engineers, vol.
LXIII., 1880—vol. CXXXII., 1898.

Institution of Engineers and Shipbuilders in Scotland—Transac-
tions.

Institution of Junior Engineers—Transactions.

Institution of Mechanical Engineers—Proceedings.

Royal Institute of British Architects—Journal and Proceedings.

Society of Chemical Industry—Journal.

Societe des Ingenieurs Civils de France—Memoires.

United States Coast and Geodetic Survey—Report.

United States Government Tests of Metals, etc.—Report.

University of Toronto—Studies.

THE ENGINEERING SOCIETY OF THE SCHOOL OF PRACTICAL SCIENCE.

Officers for 1905-06.

President J. P. C. Charlebois.

Vice-President E. L. Cousins.

Recording Secretary E. C. Ash.

Treasurer D. W. Marrs.

Corresponding Secretary ... C. S. Shirriff.

Editor To be appointed.

Librarian C. W. Power.

Assistant Librarian E. G. Hewson.

Graduates' Representative A. E. Davison.

Fourth Year Representative ... A. Latonnell.

Third Year Representative J. Gray.

Second Year Representative ... R. J. Gibson.

First Year Representative To be elected.

The Society meets every second Wednesday during the Academic Year. Papers are read, and discussions are held on engineering subjects. The Society publishes a pamphlet annually, containing the best papers read at the meetings.

SCHOOL OF PRACTICAL SCIENCE ATHLETIC ASSOCIATION.

Executive Committee, 1904-05.

Honorary President	Principal Galbraith.
President	W. G. Swan.
Vice-President	F. C. Broadfoot.
Secretary-Treasurer	R. L. Harrison.
IV. Year Representative	J. W. Larkworthy.
III. " "	W. H. Young.
II. " "	W. Blackwood.
I. " "	F. Connery.

The athletic association is the ruling body in School athletics, and has full control over all athletic clubs using the School name. The Executive Committee has power to suspend any one from the privileges of membership in the association for any breach of its regulations, and controls the finances of all athletic clubs in the School. The annual membership fee of this association is fifty cents.

No other monies are collected for the support of athletics in the School without the sanction of the Executive Committee.

RUGBY FOOTBALL.

The Mulock Cup, which was presented by Hon. Wm. Mulock, M.A., LL.D., to the University of Toronto Rugby Foot-ball Club for inter-college competition, brings out each year a large number of contestants from the University and affiliated colleges.

RUGBY FOOTBALL CLUB OF THE SCHOOL OF PRACTICAL
SCIENCE,

Officers.

Hon. President	Principal Galbraith.
President	P. M. Yeates.
Sec.-Treas.	F. N. Rutherford.
Manager of senior team	W. N. Daniels.
Captain of senior team	R. Montague.
Manager of junior team	F. Connery.
Captain of Junior team	F. A. McGiverin.

ASSOCIATION FOOTBALL.

In order to encourage Association Football on the College Campus, the Faculty of the University of Toronto presented a cup, known as the Faculty Cup, to the Inter-College Association Football Club for annual competition among University and affiliated colleges.

ASSOCIATION FOOTBALL CLUB OF THE SCHOOL OF PRACTICAL
SCIENCE.

Officers.

Hon. President.	Prof. L. B. Stewart.
President	J. A. McFarlane.
Sec.-Treas.	J. M. MacInnes.
Manager of Seniors.....	W. C. Jepson.
Manager of Juniors.....	G. W. Rayner.

HOCKEY.

The trophy which is competed for annually among the Colleges in Hockey is known as the Jennings Cup, and is the gift of W. T. Jennings, Mem., Inst. C. E., Consulting Engineer, Toronto.

HOCKEY CLUB OF THE SCHOOL OF PRACTICAL SCIENCE.

Officers.

Hon. President.	Professor Ellis.
President	G. W. Rayner.
Vice-President	F. C. Broadfoot.
Sec.-Treas.	J. M. MacInnes.
Manager of senior team	E. A. Henry.
Manager of Junior Team	K. Hall.

TRACK CLUB.

Officers, 1904-1905.

President	L. W. Morden.
Vice-President	J. P. Charlebois.
Sec.-Treas.	R. L. Harrison.
IV. Year Representative ...	W. R. Worthington.
III. " "	H. W. Wilkie.
II. " "	W. N. Daniels.
I. " "	F. H. Chesnut.

THE TORONTO ENGINEER COMPANY.

Major Commanding ...	W. R. Lang, Prof. of Chemistry, University of Toronto.
Lieut. (Acting Adj.)	H. N. Gzowski.
Lieutenant	H. W. Evans.
Lieutenant	J. G. Fleck.
Lieutenant	C. S. L. Hertzberg.
Lieutenant	H. F. H. Hertzberg.
Company Sergt. Major	—Woodburn.
Sgt.	N. A. Burwash.
Sgt.	O. B. McCuaig.
Sgt.	A. E. Davison.
Sgt.	W. E. Wickett.

The Toronto Engineer Company.—*Continued.*

Sgt.	A. M. Campbell.
Sgt. on Staff	S. B. Wass.
Lance Sgt.	J. P. Charlebois.
Signal Sgt.	W. E. Cane.
Quarter Master Sgt.	A. Williams.

UNIVERSITY OF TORONTO ATHLETIC ASSOCIATION.

Directorate.

(From the Calendar of the University of Toronto).

Pres.—President Loudon.

Vice-Pres.—F. W. Baldwin.

Sec.-Treas.—W. G. Wood, D.D.S.

Dir.—Prof. J. McG. Young.	Dir.—Rev. D. B. Macdonald,
“ W. J. O. Malloch, B. A.,	M.A
M.B.	“ E. Boyd.
“ R. E. Williams.	“ E. M. Henderson.
“ J. C. Sherry.	“ S. P. Biggs.

The athletic association is now the paramount body in University Athletics, and has entire jurisdiction over the athletic clubs using the University name, and over their finances, members, and policy, subject to the University authorities. Henceforth no financial agreement can be entered into by any such club without the sanction of the Directorate. No expenditure of any kind in connection with any such club can be made without the written order of the Secretary-Treasurer of the Directorate.

GYMNASIUM AND ATHLETIC GROUNDS.

(From the Calendar of the University of Toronto).

“The University gymnasium was completed and equipped in 1893. It is fully provided with the best and most modern appliances for physical culture, and contains a running track, show-

er baths and swimming bath, besides the necessary dressing rooms and other conveniences. A competent instructor in gymnastics is in constant attendance to superintend and direct the exercises of students. In addition to the lawn in front of the Main University Building and a campus in the rear, a large plot of ground on Devonshire Place has been set apart as an athletic field. By this addition the facilities for football, cricket, tennis and other out-door athletic sports are doubled, as compared with previous accommodation; and by these grounds, in conjunction with the gymnasium, ample opportunity is afforded to all students for healthful exercise and physical development. To assist in meeting the expenses of the gymnasium, a nominal annual fee is imposed on those who avail themselves of its advantages. The supervision of all athletic matters has been entrusted by the Councils to an Athletic Board, consisting of six members appointed from the Faculty and officers of the Athletic Association. All applications of clubs for the use of grounds must be made annually to this Board. All such applications must be accompanied by a list of officers. In the case of new clubs the list of officers must be accompanied by particulars as to the organization and objects of the club making application."

STUDENTS' UNION BUILDING.

(From the Calendar of the University of Toronto).

"In 1894 additions were made to the front of the building in which the gymnasium is situated, consisting of a large hall for public meetings, a reading room and committee rooms. This additional accommodation is available for the work of the various student societies, and for academic purposes. Applications for the use of rooms, accompanied by a list of officers and a copy of the constitution of the society making application, must be made, through the President, to the joint committee of the Councils on Gymnasium and Students' Union Building, at the beginning of the season, or from time to time as occasion requires. Arrangements have also been made by which recognized societies may obtain the use of committee rooms on application to the janitor of the Students' Union Building."

SESSION 1904-1905.

STUDENTS IN ATTENDANCE.

FIRST YEAR.

Regular Students.

3	Adams, G. H.	Victoria, B. C.
3	Akers, H. G.	Toronto.
3	Anderson, J. E.	Lindsay.
3	Ash, E. C.	Todmorden.
3	Atkinson, B.	Deloraine, Man.
1	Augustine, A. P.	Arkona.
3	Beckstedt, R. D. S.	Prescott.
1	Bishop, W. J.	Cryslar.
3	Bothwell, C. C.	Barrie.
3	Bowman, H. D.	London.
3	Boyd, G. M.	Bobcaygeon.
1	Broughton, G.	Paris.
1	Brown, J. A.	Sarnia.
1	Bryce, W. F. M.	Toronto.
1	Bush, C. E.	Toronto.
1	Caldwell, J. E.	Davenport.
1	Carrie, K. N.	Toronto.
1	Carscallen, H. R.	Calgary, Alta.
1	Chesnut, F. H.	Toronto.
3	Clendenning, C. S.	Walkerton.
3	Collett, W. C.	Toronto.
3	Colvin, C. W.	Galt.
1	Connery, F.	Toronto.
1	Copeland, M.	Emerson, Man.
1	Cory, R. Y.	Toronto.
1	Cowper, G. C.	Welland.

First Year.—*Continued.*

2	Cruickshank, A. M.	Weston.
2	Culbert, V.	London.
3	Cummer, H. H.	Hamilton.
3	Dawson, G. A.	Mount Forest.
3	Dissette, A. C.	Toronto.
3	Evans, S. D.	Leamington.
3	Ewart, F. R.	Toronto.
3	File, E. S.	Napanee.
1	Fleming, G. R. S.	Toronto.
3	Fletcher, E. S.	Toronto.
1	Flint, C.	Toronto.
3	Francis, G.	Verschoyle.
6	Fux, P. C.	Brantford.
2	Galt, G.	Rossland, B.C.
1	Garrow, A. B.	Toronto.
1	Gerard, A.	Ottawa.
2	Gibson, R. J.	Bradford.
1	Gillies, A.	St. Thomas.
1	Glover, A. E.	Beaverton.
1	Grady, J. E.	Macleod, Alta.
1	Graham, G. W.	Eugenia.
3	Gray, M. H.	Barrie.
1	Hagarty, R. E. W.	Toronto.
2	Hague, R. D.	London.
1	Hall, J. H.	Toronto.
1	Hamilton, C. T.	Windsor.
5	Harris, F. K.	Toronto.
1	Hertzberg, H. F. H.	Toronto.
3	Hill, H. O.	Toronto.
1	Hogg, T. H.	Chippawa.
3	Hoskins, D. W.	Toronto.
1	Hyland, H. M.	Whitby.
3	Hyman, E. W.	London.
3	Ireland, L. G.	Durham.
1	Jackson, W.	Ridgeway.
3	Janney, W. E. ...	Galt.

First Year.—Continued.

3	Kay, E. W.	Paris.
1	Klingner, L. W.	Toronto.
1	Lamb, F. C.	Walkerton.
3	LePan, A. D.	Owen Sound.
1	Lindsay, J. H.	Hornby.
3	Maclean, B. A.	Orillia.
1	McLeod, G.	Parkhill.
3	McCully, K. C.	Deer Park.
3	McCurdy, J. A. D.	Toronto.
2	McDonald, P.	Toronto.
2	McGiverin, F. A.	Hamilton.
3	McGugan, D. J.	Ekfrid.
3	McIntosh, A. M.	Mosboro.
1	McKechnie, F. H.	Woodstock.
1	McKellar, L. D.	Toronto.
1	McLean, A. L.	Hensall.
3	McNeill, F. W.	Toronto.
3	Macfie, D. A.	Nottawa.
1	Maher, W. R.	Eganville.
3	Marshall, A.	Snelgrove.
6	Mason, D. H. C.	Toronto.
5	Milligan, G. L.	Brampton.
1	Mills, G. G.	Toronto.
3	Minns, J. B.	Woodstock.
1	Moore, J. M.	London.
5	Morley, P. F.	Berlin.
3	Murray, W. P.	Fairview.
1	Murray, E. W.	Seaforth.
1	Neelands, R. E. K.	Brampton.
1	Neelands, E. W.	Forest.
2	Neilly, B.	Bradford.
3	Nelson, S. W. H.	Toronto.
3	Nighswander, D. L.	Keenora.
1	O'Gorman, C. A.	Depot Harbor.
1	Oxley, J. M.	Toronto.
2	Paton, T. K.	Merritton.

First Year.—*Continued*

5	Pattinson, F. H.	Preston.
1	Paulin, F. W.	Arthur.
3	Percy, H. A.	Alvinston.
3	Perry, F. A.	Toronto.
1	Phillips, C. S.	Minden.
1	Potter, R. B.	Minden.
3	Prochnow, F.	New London, Conn.
3	Procunier, J. F.	Bayham.
3	Qua, A. H.	Bayham.
3	Quance, G. E.	Delhi.
3	Raine, H.	Orton.
1	Rannie, J. L.	Newmarket.
3	Richardson, A. B.	Walkerton.
3	Richardson, C. W. B.	Norwood.
1	Ridler, A. A.	Toronto.
5	Robertson, F. A.	Toronto.
3	Robertson, C. P.	Hamilton.
2	Ronald, C. S.	Meaford.
5	Rothwell, H. E.	Toronto.
5	Rothwell, W. E.	Toronto.
5	Scholfield, C. A. ...	Dunnville.
1	Scott, C. A.	Toronto.
2	Scott, J. M.	Toronto.
3	Shearer, H. P.	Vittoria.
1	Sheppard, A. C. T.	Ottawa.
3	Smith, N. E.	Toronto.
3	Smithrim, E. R.	Cairngorm.
1	Snaith, W.	Quebec.
3	Spence, J. J. ...	Toronto.
3	Spencer, A. C.	London.
3	Stalker, J. D. B.	Walkerton.
3	Stewart, G. S.	Strathroy.
1	Stiles, J. A. C.	London.
3	Stiver, J. L.	Mount Albert.
1	Summers, G. F.	Winchester.

First Year.—Continued.

1	Sutcliffe, H. W.	Forest.
3	Thomson, O. R.	Blenheim.
3	Toms, C. G.	Toronto.
1	Tye, H. W.	Stratford.
1	Walker, J. A.	Guelph.
3	Webb, C. E.	Toronto.
1	White, W. R.	Drayton.
1	Wilkes, E. D.	Brantford.
1	Williams, D.	Lindsay.
3	Wilson, A. F.	Toronto.
3	Wilson, F. F.	Harriston.
3	Woods, M. H.	Aylmer.
1	Workman, G. R.	Waterdown.
4	Zinkan, W. E.	Southampton.

Non-Regular Students taking Full Course.

3	Allen, F. G.	Erie, Pa.
1	Anderson, F. J.	Niagara Falls.
1	Beardmore, C. O.	Toronto.
3	Bethune, R. M.	Toronto.
1	Bruce, W. J.	Gamebridge.
1	Buchanan, J. A.	Comber.
3	Campbell, G. A.	Millbrook.
3	Caster, J. H.	Claremont.
2	Charlton, O. W. N.	Toronto.
3	Connell, C. B. B.	Lime Kiln, B. W. I.
3	Coulter, G. P.	Buffalo, N. Y.
3	Doorly, H. C.	San Fernando, Trin.
2	Dyer, F. C.	Toronto.
3	Fetherstonhaugh, J.	Toronto.
3	Foreman, J. M.	Lucan.
3	Fraser, R. D.	Pilot Mound, Man.
1	Galletley, J. S.	Toronto.
3	Gillies, A. R.	Toronto.
3	Hall, K.	Penetanguishene.

Non-Regular Students Taking Full Course.—*Continued.*

3	Hall, R. H.	Peterboro.
3	Hallam, T. D.	Toronto.
1	Hara, F. J.	Merritton.
1	Hellmuth, H. I.	Toronto.
1	Hewson, E. G.	St. Catharines.
3	Hutton, C. H.	Hamilton.
4	Jackson, B.	Petrolea.
1	Jardine, W. S.	Omeme.
2	Johnson, H. A.	Hamilton.
1	Johnston, H. C.	London.
3	Keith, D. F.	Toronto.
2	Kennedy, M. D.	Toronto.
4	Kerr, K. C.	Petrolea.
3	King, W. S.	Guelph.
1	Kinghorn, A. A.	Toronto.
5	Lewis, R. G.	Toronto.
1	Lloyd, N. C. A.	Kettleby.
3	Lynar, H. R.	Toronto.
1	McNeill, I. F.	Ottawa.
1	Malcolmson, W. S.	Toronto.
3	Maynard, H. V.	Port Hope.
3	Melson, J. W.	Oakville.
1	Miller, H. H.	Toronto.
3	Murray, J. D.	Toronto.
3	Nicholls, N. C.	Toronto.
1	Nourse, A. E.	Toronto.
1	O'Grady, E. W.	Toronto.
3	Oke, W. V.	Toronto.
4	Page, F. P.	Toronto.
1	Paquet, J. E.	Quebec, Que.
1	Pearson, A. W.	Weston.
1	Phillips, H. G.	Minden.
3	Pollard, B.	Petrolea.
3	Ratz, A. P.	Elmira.
3	Ryerson, G. C.	Toronto.
3	Saylor, S. A.	Bloomfield.

Non-Regular Students Taking Full Course.—*Continued.*

1	Siegner, W. A.	Tavistock.
1	Stuart, J. L. G.	Toronto.
3	Sylvester, K. B.	Toronto.
1	VanNostrand, J.	Toronto.
3	Wedlake, R.	Brantford.
3	Weir, R. P.	Toronto.
2	Wright, J. V.	Montreal.
1	Ziegler, O. E.	Toronto.

SECOND YEAR.

3	Amos, W. L.	Guelph.
1	Arens, A. H.	Orillia.
3	Armer, J. C.	Chesley.
3	Arnott, G. C.	Toronto.
1	Baker, M. H.	St. Thomas.
2	Banting, E. W.	Toronto.
3	Barber, F.	Toronto.
2	Bates, M.	Chatham.
5	Beeman, J. J.	Sandwich.
2	Bellisle, J. P.	Toronto.
3	Betts, H. H.	London.
5	Beynon, D. E.	Toronto.
2	Bissett, G. W.	Kincardine.
3	Blackwood, W. C.	Harriston.
1	Bourne O. B.	Winnipeg, Man.
3	Brady, W. S.	Toronto.
3	Brandon, H. E.	Cannington.
1	Brian, M. E.	Windsor.
2	Broadfoot, F. C.	Seaforth.
2	Brown, T. W.	Alberton.
1	Bunnell, A. E. K.	Brantford.
3	Byam, F. M.	Toronto.
3	Cameron, A.	Marmora.
3	Campbell, A. W.	Melita, Man.
1	Carroll, M. J.	Toronto.
3	Carroll, A. M.	Richmond Hill.

Second Year.—*Continued.*

3	Chadwick, R. E. C.	Toronto.
1	Christie, F.	Manchester.
1	Clark, G. T., B.A.	Campbellford.
3	Clendening, C. A.	Walkerton.
5	Coleman, R. M.	Toronto.
3	Colhoun, G. A.	Alvinston.
1	Cook, A. B.	Georgetown.
1	Cook, W. A. M.	Toronto.
1	Cousins, E. L.	Toronto.
3	Crawford, A.	Fernhill.
4	Creighton, A. G.	Dartmouth, N. S.
4	Daniels, W. N.	Norristown, Pa.
3	Davis, R. S.	Schomberg.
3	Death, N. P. F.	Dixie.
3	Doidge, E. H.	Lakefield.
3	Dundass, C. S.	Putnam.
2	Evans, H. W.	Toronto.
3	Fear, S. L.	Amherstburg.
3	Fletcher, H. M.	Hamilton.
5	Forward, C. C.	Iroquois.
1	Foster, W. J.	Windsor.
1	Glendinning, G.	Ailsa Craig.
5	Graham, C. W.	Bradford.
1	Grant, L. E. H.	Bridgetown, B. W. I.
3	Grasett, C. S.	Barrie.
3	Gray, J.	Port Credit.
1	Greene, P. W.	Orillia.
1	Greene, W. H.	Toronto.
3	Hamilton, C. B.	Toronto.
3	Hare, R. A. N.	St. Catharines.
1	Harkness, A. L.	Iroquois.
1	Harris, R. C.	Hebron, N. S.
1	Harrison, E.	Belleville.
1	Harrison, R. L.	Grimsby.
3	Hartney, J. C.	Toronto.
1	Hett, S.	Sutton West.
3	Hillis, C. R.	Watford.

Second Year.—*Continued.*

1	Holmes, O. B.	Selkirk.
3	Hookway, C. W.	London.
3	Hopkins, R. H.	Lindsay.
2	Horwood, H. O. R.	Toronto.
1	Houston, R. S.	Emerson, Man.
2	Huber, W.	Bracebridge.
3	Hull, A. H.	Cayuga.
3	Jepson, W. C.	Niagara Falls.
1	Johnston, C.	Toronto.
1	Jones, G. R.	Brantford.
3	Jones, T.	Toronto.
1	Keith, H. P.	Comber.
3	Keppy, J. D.	Spence.
2	Lamb, G. J.	Walkerton.
1	Lang, J. L.	Toronto.
3	Linton, A. P.	Galt.
3	Macdonald, F. R.	Lindsay.
1	MacInnes, J. M.	Ripley.
1	Mackay, A. G.	Lucknow.
2	MacKenzie, A. K.	Toronto.
1	MacKinnon, W.	Woodbridge.
3	MacLachlan, W.	Toronto.
4	McConnell, A. W.	Walkerton.
2	McDonald, L. C.	Walton.
1	McFarlane, J. B., B.A.	Claremont.
1	McGregor, J. M.	Ridgetown.
3	McIlwraith, D. G.	Galt.
2	McKenzie, J. A.	Kincardine.
1	McNab, J. V.	Ayr.
3	McPherson, J. A.	Toronto.
1	McQuarrie, M. K.	Norman.
3	Maguire, H. C.	St. Catharines.
3	Marrs, D. W.	Beamsville.
3	Maxwell, W. A.	Windsor.
1	Meader, C. H.	Toronto.
3	Meader, J. E.	Toronto.
1	Menzies, J. M.	Staples.

Second Year.--Continued.

3	Miller, L. R.	Orillia.
1	Mitchell, B. F.	Harriston.
3	Molesworth, G. N.	Toronto.
1	Montague, F. F.	Hamilton.
1	Murdock, C. R.	Brampton.
2	Murphy, C. J.	St. Catharines
1	Near, W. P., B.A.	St. Marys.
2	Neelands, R., B.A.	Wheatland, Man.
3	Park, D. G.	Chatham.
3	Pennington, C. H. L.	London.
5	Peterson, C. A.	Toronto.
5	Pettingill, R. E.	Rose Hall.
1	Power, C. W.	Toronto.
1	Pringle, H. L.	Whitby.
2	Purser, R. C.	Windsor.
3	Reynolds, G. B.	Toronto.
3	Ritchie, H. C.	Elmvale.
3	Robertson, N. R.	Walkerton.
1	Roddick, J. O.	Brantford.
1	Rogers, C. H.	Peterboro.
2	Rolfson, O.	Walkerville.
1	Ross, K. G.	Toronto.
1	Ross, R. C.	Port Robinson.
1	Routly, H. T.	Kirkfield.
2	Ryckman, J. H.	Fruitland.
3	Sanders, W. K.	St. Thomas.
1	Scott, W. A.	Galt.
1	Seibert, F. V.	Southampton.
3	Sewell, R. L.	Toronto.
3	Silcox, A. B.	Lansing, Mich.
1	Stewart, W. M.	Hamilton.
2	Stirrett, G. P.	Petrolea.
1	Strathy, E. S. G.	Toronto.
1	Taylor, W. C.	Hamilton.
2	Thompson, H. P.	Toronto.
1	Thompson, P. M.	Picton.
2	Thomson, J. E.	Toronto.

1	Thomson, A.	Beudale.
3	Vickery, C. L.	Port Perry.
1	Wilson, J. M.	Toronto.
3	Wilson, J. N.	Shanly.
3	Wood, E. M.	Sweaburg.
3	Young, J.	Chesley.
3	Zimmer, A. R.	Brussels.

THIRD YEAR.

3	Arens, H. W.	Orillia.
3	Armour, R. H.	Toronto.
3	Aylsworth, C. B.	London.
3	Baldwin, F. W.	Toronto.
1	Barber, W.	Toronto.
2	Begg, W. A.	West Flamboro.
3	Bell, G. G.	Chesley.
1	Boeckh, J. C.	Toronto.
3	Bristol, W. M.	Madoc.
2	Campbell, W. C.	Keene.
3	Carson, W. R.	Carsonby.
3	Chantrell, E.	New Westmister, B. C.
3	Charlebois, J. P. C.	Toronto.
1	Chase, A. V.	Orillia.
3	Clement, S. R. A.	Churchill.
3	Corrigan, T. E.	Toronto.
1	Crosby, N. L. R.	Hebron, N. S.
3	Dowling, F.	Harriston.
1	Ferguson, G. H.	Toronto.
3	Fierheller, H. S.	Toronto.
3	Harrison, F. W.	Hagersville.
1	Hendry, M. C.	Toronto.
1	Henry, E. A.	Kincardine.
2	Hertzberg, C. S. L.	Toronto.
3	Hewson, W. G.	Niagara Falls.
1	Jones, G. S.	Smith's Falls.
3	Kribs, G.	Hespeler.

Third Year.—*Continued.*

2	Laing, P. A.	Dundas.
1	Latornell, A.	Meaford.
3	Leighton, J. W.	Toronto.
1	Loudon, T. R.	Toronto.
1	Lytle, F. H.	Toronto.
3	McGorman, S. E.	St. Marys.
1	McGregor, W. W.	Glen Williams.
2	McKenzie, D. W.	Lochalsh.
2	McLean, W. N.	Toronto.
3	McLean, C. A.	St. Thomas.
3	Mace, F. G.	Toronto.
3	Mace, T. H.	Toronto.
3	Moffatt, R. W.	Bognor.
3	Morden, L. W.	Hamilton.
3	Munro, G. R.	Peterboro.
3	Nicklin, W. G.	Grand Rapids, Mich.
1	O'Brien, E. D.	Merrickville.
1	Patten, B. B., B.A.Sc.	St. George.
1	Phillips, E. P. A.	Toronto.
1	Porte, W. B.	Oakville.
2	Pullen, E. F.	Oakville.
2	Ramsey, G. L.	Dunnville.
1	Rayner, G. W.	Thorold.
3	Richardson, W. L.	Walkerton.
3	Ross, R. B.	Toronto.
5	Rothwell, T. E.	Gilford.
2	Scott, G. S.	Toronto.
3	Serson, H. V.	Antrim.
3	Shirriff, C.	Niagara Falls.
3	Sisson, C. E.	Peterboro.
1	Southworth, H. S.	Toronto.
1	Stewart, D. L. N.	Toronto.
1	Stewart, M. A.	Toronto.
3	Stubbs, W. M.	Buffalo, N. Y.
1	Sturdy, N. H.	Lakefield.
1	Swan, W. G.	Kincardine.
1	Sykes, F. H.	Toronto.

Third Year.—*Continued.*

3	Thomson, L. R.	Toronto.
3	Tillson, E. D.	Tillsonburg.
1	Traill, J. J.	Toronto.
1	Treadgold, W. M., B.A.	Brampton.
3	Turner, W. E.	Orangeville.
3	Uren, A. E.	Ingersoll.
1	Vansittart, G. E.	Toronto.
3	Vaughan, J.	Toronto.
1	Wagner, H. L.	Toronto.
5	Wickett, W. E.	Toronto.
3	Yeates, P. M.	London.
2	Young, W. H.	Clifford.

76

FOURTH YEAR.

	Bonnell, M. B.	Bobcaygeon.
	Burwash, N. A.	Toronto.
	Calder, J. W.	Cranbrook, B.C.
	Campbell, A. J.	Collingwood.
	Campbell, A. M.	Toronto.
	Christie, U. W.	Chesley.
	Coates, P. C.	Victoria, B.C.
	Code, T. F.	Smith's Falls.
	Crerar, S. R.	Brussels.
	Davison, A. E.	Prescott.
	Depew, H. H.	Hamilton.
	Ford, A. L.	Grimsby Park.
	Gibson, W. S.	Toronto.
	Gray, W. W.	Uxbridge.
	Greenwood, W. K.	Toronto.
	Hanes, G. S.	Windsor.
	James, E. A.	Thornhill.
	Jermyn, P. V.	Toronto.
	Larkworthy, W. J.	Mitchell.
	McAuslan, H. J.	Heathcote.
	McCuaig, O. B.	Toronto.

Fourth Year.—*Continued.*

McEwen, G. G.	Moose Creek.
McFarlane, W. G., B.A.	Claremont.
McGibbon, C. P., B.A.	Brampton.
McKay, C. D.	Maplewood.
Marriott, F. G.	Toronto.
Montgomery, R. H., D.L.S....	Brantford.
Pace, G.	Orillia.
Parke, J.	Oil City.
Peaker, W. J.	Brampton.
Raymond, D. L. C.	Windsor.
Roxburgh, G. S.	Norwood.
Rutherford, F. N.	South Monaghan.
Sheply, J. D.	Leamington.
Shipe, H. M.	Toronto.
Smither, W. J.	Toronto.
Thomson, S. E.	Blenheim.
Townsend, D. T.	Woodstock.
Townsend, C. J.	Toronto
Trimble, A. V.	Toronto.
Tucker, B. B.	Allanburg.
White, H. F.	London.
Walker, E. W.	Cayuga.
Williams, C. G.	London.
Worthington, W. R.	Toronto.
Wright, W. F.	Toronto.
Young, C. R.	Picton.

Occasional.

Allen, T. B.	Toronto.
Holcroft, H. S., D.L.S.	Toronto.
Morton, P. E.	Belhaven.
Parker, T. H.	Barrie.
Weddell, R. G.	Trenton.

PRIZEMEN.

Engineering.

1879.—	I.	Year	J. McAREE	1st Prize.
1880.—	II.	"	J. L. MORRIS	1st "
1881.—	I.	"	G. H. DUGGAN	1st "
	II.	"	D. JEFFREY	1st "
1882.—	I.	"	A. R. RAYMER	1st "
	I.	"	E. W. STERN	2nd "
	II.	"	G. H. DUGGAN	1st "
	III.	"	D. JEFFREY	1st "
1883—	I.	"	B. A. LUDGATE	1st "
	I.	"	A. M. BOWMAN	2nd "
	II.	"	A. R. RAYMER	1st "
	II.	"	E. W. STERN	2nd "
	III.	"	G. H. DUGGAN	1st "
1884—	II.	"	B. A. LUDGATE	1st "
	III.	"	E. W. STERN	2nd "
	III.	"	A. R. RAYMER	2nd "
1885—	I.	"	A. E. LOTT	1st "
	I.	"	J. ROGERS	2nd "
	II.	"	T. K. THOMSON	1st "
	III.	"	B. A. LUDGATE	1st "
1886—	I.	"	C. H. C. WRIGHT	1st "
	I.	"	J. E. ROSS	2nd "
	II.	"	A. E. LOTT	1st "
1887—	I.	"	H. E. T. HAULTAIN	1st "
	II.	"	C. H. C. WRIGHT	1st "
	III.	"	A. E. LOTT	1st "
	III.	"	J. ROGERS	2nd "
1888—	I.	"	E. B. MERRILL	1st "
	I.	"	F. M. BOWMAN	2nd "
	II.	"	D. D. JAMES	1st "
	III.	"	C. H. C. WRIGHT	1st "

Prizemen.—*Continued.*

1889—	I. Year.	.....	J. K. ROBINSON	.....1st	“
	I.	“	.....	G. E. SILVESTER.....2nd	“
	II.	“	.....	E. B. MERRILL.....1st	“
	II.	“	.....	F. M. BOWMAN.....2nd	“
	III.	“	.....	D. D. JAMES	.....1st “
1890—	I.	“	.....	C. FAIRCHILD	... ..1st “
	II.	“	.....	J. K. ROBINSON	.....1st “
	III.	“	.....	F. M. BOWMAN	... ..1st “
	III.	“	.....	E. B. MERRILL	... ..2nd “
1891—	I.	“	.....	A. J. McPHERSON	...1st “
	I.	“	.....	R. B. WATSON	... ..2nd “
	II.	“	.....	J. B. GOODWIN	.....1st “
	III.	“	.....	G. E. SILVESTER	.....1st “
	III.	“	.....	C. W. DILL	.....2nd “
1892—	I.	“	.....	A. E. BERGEY	.....1st “
	I.	“	.....	R. W. ANGUS	... ..2nd “
	II.	“	.....	A. J. McPHERSON	...1st “
	II.	“	.....	R. B. WATSON	... ..2nd “
	III.	“	.....	E. J. LASCHINGER	...1st “
	III.	“	.....	C. FAIRCHILD	... ..2nd “

The Grant of prizes was withdrawn at the close of 1892.

Architecture.

The prize in Architecture was the gift of Mr. D. B. Dick, Architect, Toronto.

1891—I.	Year	...	...	...	H. F. BALLANTYNE.
1892—I.	"	...	...	...	J. A. EWART.
1893—I.	"	...	...	...	A. H. HARKNESS.
1894—I.	"	...	...	...	E. A. FORWARD.
1895—I.	"	...	...	...	W. F. SCOTT.
1896—I.	"	...	...	...	D. MACINTOSH.
1899—I.	"	...	...	...	W. F. SHEPHERD.

Civil Engineering.

The prize in Civil Engineering is the gift of Mr. T. Kennard Thomson, C.E., New York.

1897—III.	Year	...	M. B. WEEKES.
1898—III.	"	...	J. A. STEWART.
1899—III.	"	...	T. SHANKS.
1900—III.	"	...	E. H. PHILLIPS.
1901—III.	"	...	H. P. RUST.
1902—III.	"	...	W. F. RATZ.
1903—III.	"	...	C. R. YOUNG.
1904—III.	"	...	W. N. MOORHOUSE.

Mechanical and Electrical Engineering.

Donor, Mr. F. A. Riehle, Philadelphia.

1897—III.	Year	...	A. T. GRAY.
1898—III.	"	...	F. C. SMALLPIECE.

UNIVERSITY OF TORONTO.

Degree of Bachelor of Applied Science.

Date of
admission. Name.

1893...Alison, T. H.
1897 *Angus, R. W.
1904 *Angus, H. H.
1901...Ardagh, E. G. R.
1896...Armstrong, J.
1897 *Bain, J. W.
1894 *Ballantyne, H. F.
1901...Barley, J. H.
1902...Barrett, R. H.
1895...Beauregard, A. T.
1903...Blair, W. J.
1902 *Boswell, M. C.
1899...Boyd, W. H.
1902...Brandon, E. T.
1903...Brereton, W. P.
1896...Brodie, W. M.
1895...Bucke, W. A.
1900...Burnside, J. T. M.
1898...Carpenter, H. S.
1899...Carter, W. E. H.
1903 *Chace, W. G.
1903 *Chadsey, S. B.
1898...Charlton, H. W.
1894 *Chewett, H. J.
1903 *Christie, W.
1900 *Chubbuck, L. B.
1902...Cockburn, J. R.
1900...Coulthard, R. W.
1903 *Culbert, M. T.
1901...Craig, J. A.
1901...Davison, J. E.
1902...DeCew, J. A.

Date of
admission. Name.

1897 *Elliott, H. P.
1903...Empey, J. M.
1895 *Ewart, J. A.
1904...Fensom, C. J.
1901...Foreman, W. E.
1904 *Gaby, F. A.
1903 *Gagne, S.
1904...Gardner, J. C.
1903 *Gibson, A. E.
1904 *Gibson, N. R.
1904 *Gillespie, P.
1894...Goodwin, J. B.
1899...Grant, W. F.
1898...Gray, A. T.
1901...Guy, E.
1897 *Haight, H. V.
1904...Hamilton, J. F.
1900...Hare, W. A.
1897 *Harkness, A. H.
1902...Harvey, C.
1901...Hemphill, W.
1895...Herald, W. H.
1901...Holcroft, H. S.
1896...Hull, H. S.
1894...James, D. D.
1893...James, O. S.
1895 *Job, H. E.
1895...Johnson, S. M.
1902...Johnson, J. A.
1896...Johnson, A. C.
1894 *Keele, J.
1903...Knight, R. H.

* Degree with honours.

Degree of Bachelor of Applied Science.—*Continued.*

Date of Admission.	Name.	Date of Admission.	Name.
1901...	Dickson, G. W.	1899...	Korman, J. S.
1901 *	Dixon, H. A.	1894...	Laidlaw, J. T.
1896...	Dobie, J. S.	1893...	Laing, A. T.
1902 *	Eason, D. E.	1893 *	Laschinger, E. J.
1904...	Edwards, W. M.	1901...	Latham, R.
1897...	Macallum, A. F.	1893 *	Lawson, W.
1904...	Macintosh, D.	1893...	Lea, W. A.
1893...	McAree, J.	1894...	McAllister, A. L.
1904...	McBride, A. H.	1895...	McAllister, J. E.
1904...	McFarlane, J. A.	1903 *	Matheson, P.
1896 *	McGowan, J.	1893...	McEntee, B.
1896 *	McKinnon, H. L.	1902...	Sauer, M. V.
1903...	McMaster, A. T. C.	1900 *	Shanks, T.
1901...	McMillan, J. G.	1895...	Shields, J. D.
1894 *	McPherson, A. J.	1899...	Shiple, A. E.
1895...	McTaggart, A. L.	1903...	Sinclair, D.
1902 *	McVean, H. G.	1902 *	Smallpeice, F. C.
1897...	Macbeth, C. W.	1898...	Smiley, R. W.
1897...	Martin, T.	1904...	Smith, H. G.
1894 *	Merrill, E. B.	1894 *	Speller, F. N.
1893...	Milne, C. G.	1894...	Squire, R. H.
1896...	Mines, W. H.	1902...	Stevenson, W. H.
1895 *	Minty, W.	1898 *	Stull, W. W.
1894...	Mitchell, C. H.	1903...	Sutherland, W. H.
1900...	Monds, W.	1903...	Teasdale, C. M.
1901...	Neelands, E. V.	1900 *	Tennant, D. C.
1904...	Nevitt, I. H.	1901...	Tennant, W. C.
1904...	Oliver, E. W.	1893...	Thomson, R. W.
1904...	Pace, J. D.	1901...	Thorne, S. M.
1904...	Patten, B. B.	1901...	Thorold, F. W.
1904...	Plunkett, T. H.	1904...	Trees, S. L.
1901...	Pope, A. S. H.	1896...	Tremaine, R. C. C.
1903 *	Powell, G. G.	1900...	Wagner, W. E.
1902 *	Price, H. W.	1898...	Weekes, M. B.

* Degree with honours.

Degree of Bachelor of Applied Science.—*Continued.*

1900 *Revell, G. E.	1901...Weir, H. M.
1900...Richards, E.	1899 *Williamson, D. A.
1901...Roaf, J. R.	1904 *Wilson, N. D.
1903...Robertson, H. D.	1893 *Wright, C. H. C.
1898 *Robinson, A. H. A.	1902...Wright, R. T.
1902...Rust, H. P.	1903...Zahn, H.
1901...Saunders, H. W.	

Degree of Civil Engineer (C. E.)

1898...Alison, T. H.	1893...Bowman, F. M.
1898...Ashbridge, W. T.	1892...Chewett, H. J.
1895...Bowman, A. M.	1900...Connor, A. W.
1901...Francis, W. J.	1898...Mitchell, C. H.
1900...Haultain, H. E. T.	1896...Moore, J. E. A.
1893...Innes, W. L.	1885...Morris, J. L.
1886...Kennedy, J. H.	1892...Thomson, T. K.
1895...McAllister, J. E.	1894...Tyrrell, H. G.
1901...McDowall, R.	1889...Tyrrell, J. W.

Degree of Mining Engineer (M. E.)

1897	Bucke, M. A.
1900.....	Laidlaw, J. T.

Degree of Mechanical Engineer (M. E.)

1900.....	White, A. V.
1901	Johnston, A. C.

Degree of Electrical Engineer (E. E.)

1896	Ross, R. A.
1902	Elliott, H. P.
1903	Chubbuck, L. B.

* Degree with honours.

GRADUATES.

Note.—Graduates are requested to inform the Registrar of changes in their addresses.

1881.

Course.	Name and address.	Occupation.
---------	-------------------	-------------

- | | | |
|----|-----------------------------------|--|
| 1. | J. L. MORRIS, C.E., O.L.S.,... .. | Engineer and Surveyor.
Pembroke, Ont. |
|----|-----------------------------------|--|

1882.

- | | | |
|----|---------------------------------|---|
| 1. | D. JEFFREY... .. | Contractor.
Windsor, Missouri. |
| 1. | J. H. KENNEDY, C.E., O.L.S..... | Chief Engineer, Vancouver, Vic-
toria & Eastern Ry.
Grand Forks, B.C. |
| 1. | J. McAREE, B.A.Sc., D.T.S... .. | (deceased). |

1883.

- | | | |
|----|---------------------------------|---|
| 1. | D. BURNS, O.L.S.... .. | West Side Belt R.R.
A.M. Can. Soc. C.E.,
Pittsburgh, Pa. |
| 1. | G. H. DUGGAN..... | General Manager, Dominion Iron &
Steel Co.
M. Can. Soc. C.E.,
Sydney, N.S. |
| 1. | J. W. TYRRELL, C.E., D.L.S..... | Consulting Engineer and Surveyor.
Hamilton, Ont. |

1884.

- | | | |
|----|------------------------------|--|
| 1. | W. C. KIRKLAND... .. | Chief Engineer, Drainage Commis-
sion of New Orleans.
New Orleans, La. |
| 1. | J. McDougall, B.A..... | York County Engineer.
A.M. Inst. C.E.,
Court House, Toronto, Ont. |
| 1. | A. R. RAYMER..... | Asst. Chief Engineer, P. & L. E.
Ry.
Pittsburgh, Pa. |
| 1. | JAMES ROBERTSON, O.L.S... .. | Engineer and Surveyor.
Glencoe, Ont. |
| 1. | E. W. STERN... .. | Consulting Engineer, Steel Struc-
tures, Buildings, etc.
M. Am. Soc. C.E.,
7 West 38th St., New York. |

1885.

Course.	Name and address.	Occupation.
1.	J. F. BLEAKLEY..... Sullivan Block, Seattle, W.T.	Civil Engineer.
1.	H. J. BOWMAN, D. & O. L. S..... M. Can. Soc., C.E., Berlin, Ont.	Consulting Engineer. (County Clerk and Treasurer.)
1.	E. E. HENDERSON, O.L.S... .. Henderson, P.O., Me.	Civil Engineer.
1.	B. A. LUDGATE, O.L.S... .. Pittsburgh, Pa.	Asst. Engineer, P. & L. E. Ry.
1.	O. McKAY, O.L.S. Walkerville, Ont.	Chief Engineer, Lake Erie and De- troit River Ry.

1886.

1.	A. M. BOWMAN, D.L.S..... Pittsburgh, Pa.	Engineer, Evansville Contract Co.
1.	E. B. HERMON, D. & O.L.S..... Vancouver, B.C.	Asst. Engineer Vancouver Power Co.
1.	ROBERT LAIRD, O.L.S..... North Bay, Ont.	Engineer on Construction, Temiskaming Ry.
1.	T. KENNARD THOMSON, C.E... .. M. Am. Soc. C.E., 13-21 Park Row, New York.	Consulting Engineer.
1.	H. G. TYRRELL, C.E..... A.M. Can. Soc. C.E. 2151 Fulton Ave., Cincinnati, O.	Chief Engineer, The Brackett Bridge Co.

1887.

1.	J. C. BURNS (deceased).	
1.	A. E. LOTT... .. Los Angeles, Cal.	Consulting Railway Engineer. 441 Bradbury Bldg.
1.	A. L. McCULLOCH, O.L.S..... A. M. Can. Soc. C.E., Nelson, B.C.	City Engineer.
1.	F. MARTIN, M.B., O.L.S... ..	Physician.
1.	C. H. PINHEY, D. & O.L.S... .. Coteau Landing.	Engineer for contractor, Soulanges Canal.
1.	J. Rogers, O.L.S... .. Mitchell, Ont.	Town Engineer.

1888.

Course.	Name and address.	Occupation.
1.	J. F. APSEY, O.L.S..... 610 Cathedral St., Baltimore, Md.	Consulting Engineer.
1.	W. T. ASHERIDGE, C.E..... Edmonton, Alta.	Engineer and Surveyor.
1.	EDWARD F. BALL... A.M. Can. Soc. C.E., Room 400, Grand Central St'n., New York, N.Y.	Civil Engineer.
1.	D. B. BROWN, O.L.S..... Quebec, P.Q.	Locating Engineer, Transcontinental Ry. (G.T.P.)
1.	C. M. CANNIFF... Toronto.	Engineer, Expanded Metal and Fire-proofing Co.
1.	H. J. CHEWETT, C.E., B.A.Sc... A.M. Can. Soc. C.E., 83½ York St., Toronto, Ont.	Manager, Siche Gas Co.
1.	J. GIBBONS, D. & O.L.S... Ottawa, Ont.	Surveying staff, Dep't of Interior.
1.	R. McDOWALL, O.L.S., C.E. A.M. Can. Soc. C.E., Owen Sound, Ont.	Town Engineer.
1.	G. W. McFARLEN, O.L.S..... Toronto, Ont.	City Engineer's Staff.
1.	C. J. MARANI... 49 Cornell St., Cleveland, O.	
1.	G. R. MICKLE, B.A..... Toronto, Ont.	Lecturer in Mining Engineering, School of Practical Science.
1.	J. H. MOORE, O.L.S... Smith's Falls, Ont.	Town Engineer.
1.	G. H. RICHARDSON... Ottawa, Ont.	Assist. City Engineer.
1.	K. ROSE..... 52 Broadway, New York.	Consulting Engineer.
1.	J. E. ROSS, D. & O.L.S... Kamloops, B.C.	Surveying Staff, Dept. of Interior.
1.	C. H. C. WRIGHT, B.A.Sc..... Toronto, Ont.	Professor of Architecture, School of Practical Science.

1889.

Course.	Name and address.	Occupation.
1. B. CAREY.....	Toronto, Ont.	
1. W. J. CHALMERS	Pittsburgh, Pa.	
1. W. A. CLEMENT	A. M. Can. Sec. C.E., Toronto, Ont.	Sewer Engineer, Staff of City Engineer.
1. G. F. HANNING... ..	Winnipeg, Man.	Locating Engineer, Transcontinental Railway, Lake Abitibi.
1. H. E. T. HAULTAIN, C. E.....	M. Can. Soc. C.E. Nelson, B.C.	Mining Engineer.
1. J. IRVINE.....	Vancouver, B.C.	Engineering Staff, C.P.R.
1. D. D. JAMES, B.A., B.A.Sc.,...	Toronto, Ont.	Engineer and Surveyor, 227 George street.
1. F. X. MILL (deceased).		
1. H. K. MOBERLEY... ..	Moosomin, Assa.	District Engineer and Surveyor.
1. T. R. ROSEBRUGH, M.A.....	Toronto, Ont.	Professor in Electrical Engineering, School of Practical Science.
1. T. WICKETT, M.D.....	Hamilton, Ont.	Physician. 356 Cannon st. E.

1890.

5. W. E. BOUSTEAD (deceased).		
1. F. M. BOWMAN, O.L.S., C.E...	Pittsburgh, Pa.	Structural Engineer, Riter-Conley Mfg. Co.
1. M. A. BUCKE, M.E. (deceased).		
1. G. D. CORRIGAN (deceased).		
1. J. A. DUFF, B.A. (deceased).		
1. A. B. ENGLISH (deceased).		
1. N. L. GARLAND... ..	Toronto, Ont.	Garland Manufacturing Co. 76 Bay street.
1. J. HUTCHEON, O.L.S.....	Guelph, Ont.	City Engineer.
1. W. L. INNES, O.L.S., C.E.....	Simcoe, Ont.	Manager, Canadian Canner's Ltd.

1890.—Continued.

Course.	Name and address.	Occupation.
1.	E. B. MERRILL, B.A., B.A.Sc..... 16 King St. West, Toronto.	Consulting Electrical and Mechanical Engineer.
1.	J. R. PEDDER, deceased).	
3.	R. A. ROSS, E.E..... 80 St. Francis Xavier St., Montreal, P.Q.	Ross & Holgate, Consulting Electrical and Mechanical Engineers.
1.	T. H. WIGGINS, O.L.S..... Regina, Assa.	District Surveyor and Engineer. Dept. of Public Works, N.W.T.
1.	W. J. WITHROW..... Ottawa, Ont.	Patent Examiner, Patent Branch, Dept. of Agriculture.

1891.

1.	H. J. BEATTY, O.L.S..... Eganville, Ont.	Engineer and Surveyor
1.	T. R. DEACON, O.L.S..... Winnipeg, Man.	President. Manitoba Iron Works, Ltd.
1.	C. W. DILL..... A.M. Can. Soc. C.E., Toronto, Ont.	General Manager, Constructing & Paving Co., McKinnon Bldg.
5.	O. S. JAMES, B.A.Sc..... Toronto, Ont.	Analytical Chemist and Assayer, 227 George St.
1.	A. LANE (deceased).	
1.	J. E. McALLISTER, B.A.Sc., C.E. Supt. Greenwood, B.C.	British Columbia Copper Smelting Works.
3.	E. B. MERRILL, B.A., B.A.Sc..... 16 King St., West, Toronto.	Consulting Electrical & Mechanical Engineer.
1.	J. E. A. MOORE, C.E..... Cleveland, O.	Estimating Engineer, Wellman- Seaver & Morgan Engineering Co.
1.	W. NEWMAN, O.L.S..... A.M. Can. Soc. C.E. Windsor, Ont.	City Engineer.
1.	J. K. ROBINSON (deceased).	
1.	W. B. RUSSEL..... North Bay, Ont.	Chief Engineer, Temiskaming & Northern Ry
1.	G. E. SILVESTER, O.L.S..... Copper Cliff, Ont.	Mining Engineer, Canadian Cop- per Co.
1.	H. D. SYMMES..... Niagara Falls, Ont.	Contractor, Ontario Power Co.

1892.

Course.	Name and address.	Occupation.
1.	J. R. ALLAN, O.L.S.....	Ranchman. Macleod, Alta.
1.	T. H. ALISON, B.A.Sc., C.E....	Chief Engineer, Augustus Smith Co. 39-41 Cortlandt St., New York.
1.	A. G. ANDERSON,	Port Dover, Ont.
1.	C. FAIRCHILD, D. & O.L.S.....	Surveying Staff, Dept. of Interior. Brantford, Ont.
1.	J. B. GOODWIN, B.A.Sc.....	Asst. Engineer, Electrical Develop- ment Co. Niagara Falls, Ont.
4.	C. E. LANGLEY	Langley & Langley, Architects. Mail Bldg., Toronto, Ont.
1.	A. T. LAING, B.A.Sc.....	Registrar, Toronto, Ont. School of Practical Science.
1.	E. J. LASCHINGER, B.A.Sc.....	Asst. Engineer, Consolidated Gold Johannesburg, Fields of South Africa. Transvaal, S.A.
5.	W. LAWSON, B.A.Sc.....	Manager, Stirling Sugar Co. Stirling, Col.
3.	W. A. LEA, B.A.Sc., (deceased.)	
1.	B. McENTEE, B.A.Sc.	28 Queen St. E., Toronto.
3.	C. G. MILNE, B.A.Sc.....	Chief Engineer, Hamilton Bridge Hamilton, Ont. Works Co.
1.	CHAS. H. MITCHELL, B.A.Sc.....	Hydraulic Engineer, C.E., M. Can. Soc. C.E., Ontario Power Co. Niagara Falls, Ont.
1.	N. L. PLAYFAIR	Superintendent, Playfair Lumber Midland, Ont. Co.
1.	J. M. PRENTICE, (deceased).	
1.	J. A. ROSS	Chief Draughtman L. S. & M. S. Cleveland, O. Ry.
1.	ALBERT N. SMITH	Superintending Representative of 330 Main St., Julian Kennedy, Consulting Pittsburgh, Pa. Engineer.
1.	R. W. THOMPSON, B.A.Sc.....	Mine Captain, Consolidated Gold Johannesburg, Fields of South Africa Transvaal, S.A.
3.	A. V. WHITE, M.E.....	Mechanical Engineer. Toronto, Ont.

1893.

Course.	Name and address.	Occupation.
1.	J. A. ARDAGH.....	Resident Engineer, C.P.R. Toronto, Ont.
4.	*H. F. BALLANTYNE, B.A.Sc.....	Firm of Ballantyne & Evans, Archi- tects and Engineers, 22 Pine St. New York.
1.	G. L. BROWN, O.L.S.....	County Engineer, Dundas, Stor- mont and Glengarry. Morrisburg, Ont.
1.	*L. C. CHARLESWORTH, D.L.S.....	District Surveyor and Engineer for Medicine Hat, Assa. West Assiniboia.
1.	T. H. DUNN	Firm of Dunn & Fullerton, Civil Winchester, Ont. Engineers.
1.	J. M. R. FAIRBAIRN, P.L.S.....	Resident Engineer, C.P.R. Ottawa, Ont.
4.	*W. FINGLAND	Architect. 39 Caryl Ave., Yonkers, N.Y.
1.	C. FORESTER, Toronto, Ont.	
1.	*W. J. FRANCIS, C.E.	Engineer of Hydraulic Lift Locks, M. Can. Soc. C.E., M. Am. Soc. C.E., Peterboro, Ont. Trent Canal.
3.	*A. R. GOLDIE	Manager, Goldie & McCulloch Galt, Ont. Engine Works.
3.	S. C. HANLY	Mechanical Engineer. Midland, Ont.
4.	*J. KEELE, B.A.Sc.....	Geological Survey of Canada. Ottawa, Ont.
1.	J. T. LAIDLAW, B.A.Sc., M.E.....	Firm of McVittie & Laidlaw, Min- Cranbrook, B.C. ing Engineers and Surveyors.
3.	F. L. LASH	Manager, Batavia Electric Light Batavia, Java. Co.
1.	A. L. McALLISTER, B.A.Sc.....	Draftsman. 149 Milton St., Brooklyn, N.Y. American Steel Corporation.
1.	T. J. McFARLEN	Chief Chemist, Nova Scotia Steel Ferrona, N.S. Co.
1.	*A. J. McPHERSON, B.A.Sc.....	Mining Engineer & Surveyor. D.L.S., Dawson, Yukon Terr.

* Diploma with honours.

1893.—*Continued.*

Course.	Name and address.	Occupation.
1.	A. F. McCALLUM, B.A.Sc..... Quebec, P.Q.	Division Engineer. Transcontinental Ry. (G.T.P.)
1.	W. T. MAIN Baraboo, Wis.	Div. Engineer's Office, Chicago & North Western Ry. Co.
1.	V. G. MARANI Cleveland, Ohio.	Assistant Engineer Cleveland Gas, Light & Coke Co.
1.	W. MINES, B.A.Sc..... Cleveland, Ohio.	With Brown Hoisting Co.
3.	*J. M. ROBERTSON Montreal, P.Q.	Superintendent, Motor and Repair Dept., Montreal Light, Heat and Power Co.
1.	R. RUSSEL Pembroke, Ont.	Civil Engineer.
1.	*F. N. SPELWER, B.A.Sc..... McKeesport, Pa.	Chemist, National Tube Works Co.
1.	R. H. SQUIRE, B.A.Sc., O.L.S.... 51 George St. Brantford, Ont.	Engineer, Ontario Portland Cement Co.
1.	W. V. TAYLOR, O.L.S..... A.M. Can. Soc. C.E., Montreal, P.Q.	Engineering Staff, Locomotive and Machine Co., Ltd.
1.	*R. B. WATSON Dawson, Yukon Terr.	Mining Engineer.

1894.

3.	*R. W. ANGUS, B.A.Sc..... Toronto, Ont.	Lecturer in Mechanical Engineer- ing, School of Practical Science.
1.	H. F. BARKER..... Toronto.	With Office Specialty Mfg. Co.
1.	A. T. BEAUREGARD, B.A.Sc..... Philadelphia, Pa.	With the United Gas Improvement Co.
1.	A. E. BERGEY Pittsburgh, Pa.	With American Bridge Co. Keystone Branch.
3.	D. G. BOYD Toronto, Ont.	Draftsman, Public Works Dept.
3.	W. A. BUCKE Toronto, Ont.	With Canadian General Electric Co.
1.	J. CHALMERS, O.L.S. A.M. Can. Soc. C.E., Winnipeg, Man.	Bridge Engineer, Canadian Northern Ry.

1894.—*Continued.*

Course.	Name and address.	Occupation.
4.	*J. A. EWART, B.A.Sc.....	Arnoldi & Ewart, Architects. Ottawa, Ont.
3.	W. J. HERALD, B.A.Sc.	With Dominion Iron & Steel Co. Sydney, N.S.
3.	H. E. JOB, B.A.Sc.....	Manager Toronto and Hamilton Hamilton, Ont. Electric Co.
3	A. C. JOHNSTON, B.A.Sc., M.E.	Consulting Mechanical Engineer. Bristol, Pa.
1.	S. M. JOHNSTON, B.A.Sc., P.L.S..	City Engineer. Greenwood, B.C.
1.	J. E. JONES	Manager, M. H. Treadwell & Co., Pittsburgh, Pa. Engineers, Founders and Ma- chinists.
3.	N. M. LASH	Asst. Electrical Engineer, Montreal, P. Q. Bell Telephone Co.
1.	*A. L. McTAGGART, B.A.Sc.....	Draftsman National Tube Works McKeesport, Pa. Co.
3.	*W. MINTY, B.A.Sc.....	Consulting Engineering Dept., Na- Manchester, Eng. tional Boiler & Gen. Insurance Co.
3.	C. J. NICHOLSON Preston, Ont.	
1.	H. ROLPH	Inspector for Canadian Inspection 146 St. James St. Co. Montreal, Que.
1.	J. D. SHIELDS, B.A.Sc.....	Staff of City Engineer. Toronto, Ont.
3.	A. K. SPOTTON	With Goldie & McCulloch Engine Galt, Ont. Works.
1.	ANGUS SMITH, O.L.S., A.M. Can. Soc. C.E., Stratford, Ont.	City Engineer.
3.	R. T. WRIGHT, B.A.Sc.....	Draftsman, Westinghouse Machine Pittsburgh, Pa. Co.

* Diploma with honours.

1895.

Course.	Name and address.	Occupation.
1.	J. ARMSTRONG, B.A.Sc.....	Locating Engineer, G.T.P. Surveys. Edmonton, N.W.T.
3.	A. E. BLACKWOOD	Manager, New York Office, 42 Broadway, New York. Sullivan Machinery Co.
1.	E. J. BOSWELL, D.L.S.	Construction Department, C.P.R. Winnipeg, Man.
3.	G. BREBNER	With General Electric Co. Schenectady, N.Y.
3.	W. M. BRODIE, B.A.Sc.	With the Green Engineering Co., of Pittsburgh, Pa. Chicago.
3.	L. L. BROWN	Supt. The Foundation Co. 77 Rutland Rd., Brooklyn, 35 Nassau St. N. Y.
4.	R. J. CAMPBELL	Artist, Chicago Tribune. Chicago, Ill.
3.	A. W. CONNOR, B.A., C.E.	Engineering Department, Canada Toronto, Ont. Foundry Co.
1.	J. S. DOBIE, B.A.Sc., O.L.S.	Mining Engineer. Bruce Mines, Ont.
1.	F. W. GUERNSEY	Engineer, War Eagle Mining Co. Rossland, B.C.
4.	*A. H. HARKNESS, B.A.Sc.	Engineering Dept., Toronto, Ont. Canada Foundry Co.
3.	H. S. HULL, B.A.Sc.....	With Vulcan Iron Works. Wilkes Barre, Pa.
3.	*J. MCGOWAN, B.A., B.A.Sc.	Lecturer in Applied Mechanics, Toronto, Ont. School of Practical Science.
3.	W. N. MCKAY	With Bank of Hamilton. Hamilton, Ont.
3.	H. L. MCKINNON, B.A.Sc.	With the Brown Hoisting Machine Cleveland, O. Co.
1.	W. W. MEADOWS, D. & O.L.S....	Engineering Staff L.E. & D.R. Ry. Walkerville, Ont.
1.	F. J. ROBINSON, D. & O.L.S.	Director of Surveys for N.W.T. Regina, N.W.T. Dept. of Public Works.
3.	F. T. STOCKING	With Pike's Peake Power Co. Victor, Col.
3.	R. C. C. TREMAINE, B.A.Sc.	(Deceased).

* Diploma with honours.

1896.

Course.	Name and address.	Occupation.
2.	*J. W. BAIN, B.A.Sc.....	Lecturer in Applied Chemistry, Toronto, Ont. School of Practical Science.
2.	L. T. BURWASH	Mining Inspector. Whitehorse, Yukon.
3.	*G. M. CAMPBELL	Electrical Engineer, P. & L. E. Ry. Pittsburgh, Pa. Co.
2.	J. A. DeCEW, B.A.Sc.	Chemist, Canada Paper Co. Windsor Mills, P.Q.
3.	*H. P. ELLIOTT, B.A.Sc., M.E....	Electrical Engineer, Westinghouse Pittsburgh, Pa. Electric and Mfg. Co.
3.	W. C. GURNEY .. .	Vice-President, Gurney Foundry Co. Toronto, Ont.
3.	*H. V. HAIGHT, B.A.Sc.	Engineer, Canadian Rand Drill Co. Sherbrooke, P.Q.
1.	W. F. LAING	(Deceased).
3.	R. R. LAWRIE	(Deceased).
3.	C. MacBETH, B.A.Sc.	Engineer, Track Dept., Detroit Detroit, Mich. United Railways.
3.	J. A. McMURCHY	With Westinghouse Machine Co. Pittsburgh, Pa.
1.	T. MARTIN, B.A.Sc.	Resident Engineer, C.P.R., Cranbrook, B.C. Crow's Nest Pass Div.
3.	R. R. SHIPE	With Toronto Engraving Co. Toronto, Ont.

1897.

2.	E. ANDREWS, B.Sc.	Res. Engineer, Blaenau, Festiniog, N. Wales. Main Offeren Slate Quarry Co.
2.	*J. A. Bow	Draftsman, Washoe Smelter. Anaconda, Mon.
1.	H. S. CARPENTER, B.A.Sc., O.L.S.	Asst. Engineer, Trent Valley Canal. Peterboro, Ont.
5.	H. W. CHARLTON, B.A.Sc.....	Assistant Analyst at Experimental Ottawa, Ont. Farm.
4.	*E. A. FORWARD	Assistant Engineer, A.M. Can Soc. C.E., Iroquois, Ont. Georgian Bay Canal Survey.

* Diploma with honours.

1897.—*Continued.*

Course.	Name and address.	Occupation.
3. *A. T. GRAY, B.A.Sc.	With General Electric Co. Schenectady, N.Y.	
3. W. A. B. HICKS	With Lackawanna Steel Co. Buffalo, N.Y.	
4. C. F. KING	Geological Survey of Canada. Ottawa, Ont.	
1. H. W. PROUDFOOT	Engineer and Surveyor. Swan River, Man.	
2. *A. H. A. ROBINSON, B.A.Sc. ...	Mine Surveyor, Intercolonial Coal Westville, N.S.	Mining Co., Limited.
4. W. F. SCOTT .	Structural Engineer for J. G. How- Berkeley, Cal.	ard, Archt. Univ. of California.
3. *R. W. SMILEY, B.A.Sc. ...	Surveyor and Mining Engineer. Cleveland, Ohio.	
2. *W. W. STULL, B.A.Sc., O.L.S....	Surveyor and Mining Engineer. Sudbury, Ont.	
1. *M. B. WEEKES, B.A.Sc., D.L.S..	Surveying Staff, Dept. of the Brantford, Ont.	Interior.
1. E. A. WELDON.		

1898.

1. W. H. BOYD, B.A.Sc.	Geological Survey of Canada. Ottawa, Ont.	
2. W. E. H. CARTER, B.A.Sc.	E. T. Carter & Co., Toronto, Ont.	85 Front St., E.
3. E. H. DARLING	With Hamilton Bridge Works Co. Hamilton, Ont.	
1. W. F. GRANT, B.A.Sc.	Engineer for H. D. Symmes, Niagara Falls, Ont.	Contractor, Ontario Power Co.
1. T. S. KORMANN, B.A.Sc.	Manager, Kormann Brewing Co. Toronto, Ont.	
3. J. E. LAVROCK	Draftsman, International Harves- Hamilton, Ont.	ter Co.
4. D. MACKINTOSH, B.A.Sc., B.Arch.	Firm of Hoyt & Mackintosh, Baltimore, Md.	Architects, 11 East Pleasant St.
1. F. W. McNAUGHTON, O.L.S.....	Deputy Minister of Public Works. Winnipeg, Man.	
1. J. H. SHAW, O.L.S.	Surveyor. North Bay, Ont.	

* Diploma with honours.

1898.—Continued.

Course.	Name and address.	Occupation.
3.	A. E. SHIPLEY, B.A.Sc. Milwaukee, Wis.	Mechanical Engineer, Box 1,097.
3.	*F. C. SMALLPIECE, B.A.Sc. Peterboro, Ont.	With Canadian General Electric Co., Steam Turbine Dept.
1.	R. W. SMITH, P.L.S. Revelstoke, B.C.	Surveyor.
1.	*J. A. STEWART, M.A. Pittsburgh, Pa.	Estimating and Designing Dept., McClintic-Marshall Construction Co.
1.	*H. L. VERCOE Winnipeg, Man.	Engineering Staff, Can. Northern Ry.
3.	T. A. WILKINSON New York, N.Y.	Electrical Engineer, Ballantyne & Evans, 22 Pine St.
3.	D. A. WILLIAMSON, B.A.Sc. Hamilton, Ont.	With Hamilton Bridge Works Co.

1899.

3.	*T. BARBER Meaford, Ont.	Hydraulic Engineer, Georgian Foundry.
2.	J. T. M. BURNSIDE, B.A.Sc. Gold Coast, W. Africa.	Lieut. Gold Coast Reg. W. African Frontier Force.
3.	L. B. CHUBBUCK, B.A.Sc. Pittsburgh, Pa.	Engineering Dept., Westinghouse Electric and Mfg. Co.
2.	G. A. CLOTHIER Rossland, B.C.	Engineer, Le Roi Mining Co.
1.	C. COOPER, Carlyle, Assa.	Surveyor.
2.	R. W. COULTHARD, B.A.Sc. Ferne, B.C.	Chief Chemist, Crow's Nest Pass Coal Co.
3.	J. A. CRAIG, B.A.Sc. Toronto, Ont.	Office of Delano-Osborne Engineer- ing Co.
2.	J. C. ELLIOTT, Kelso, Ont.	
3.	W. E. FOREMAN, B.A.Sc. Pittsburgh, Pa.	Construction Dept., Westinghouse Electric and Mfg. Co.
3.	E. GUY, B.A.Sc. Pittsburgh, Pa.	Engineering Dept. Westinghouse Electric and Mfg. Co.

* Diploma with honours.

1899.—Continued.

Course.	Name and address	Occupation.
3.	*W. A. HARE, B.A.Sc. A.M. Can. Soc. C.E., Toronto.	Asst. Engineer, Jones Underfeed Stoker Co.
1.	R. LATHAM, B.A.Sc. Hamilton, Ont.	Asst. Engineer, T. H. & B. Ry.
3.	W. MONDS, B.A.Sc. Toronto, Ont.	Engineering Staff of Willis Chip- man, C.E.
3.	A. S. H. POPE, B.A.Sc.... Pittsburgh, Pa.	Electrical Eng. Dept., Westing- house Electric & Mfg. Co.
1.	J. PATTERSON, B.A. Allahabad, India.	Professor of Physics, Muir Central College.
2.	*G. E. REVELL, B.A.Sc. Montreal P.Q.	Office of Ross & Holgate, Consulting Engineers.
3.	*E. RICHARDS, B.A.Sc. Toronto, Ont.	With Toronto Electric Light Co.
3.	G. A. SAUNDERS Schenectady, N.Y.	With General Electric Co.
1.	*T. SHANKS, B.A.Sc., D.L.S. Ottawa, Ont.	Topographical Surveys Branch, Dept. of the Interior.
1.	*D. C. TENNANT, B.A.Sc. Montreal, P.Q.	With Dominion Bridge Co.
3.	W. W. VANEVRY 108 Union Ave., Montreal, P.Q.	Eng. Dept., Canada Car Co.
2.	G. H. WATT, D.L.S. Ottawa, Ont.	Topographical Surveys Branch, Dept. of the Interior.
3.	W. E. WAGNER, B.A.Sc. Wilmington, Del.	Superintendent of Construction for M'f'g's Constructing Co.
3.	E. YEATES London, Ont.	London Machine Tool Co.

1900.

1.	J. L. ALLEN	Office of Provincial Engineer, Halifax, N.S.
2.	E. G. R. ARDAGH, B.A.Sc.	Demonstrator in Chemistry, Toronto, Ont. School of Practical Science.
3.	J. A. BAIN	Structural Dept., S. V. Huber & Pittsburgh, Pa. Co., Constructing Engineers.
3.	J. H. BARLEY, B.A.Sc.	With Stanley Electric Mfg. Co. Pittsfield, Mass.

* Diploma with honours.

1900.—Continued.

Course.	Name and address.	Occupation.
2. *M. C. BOSWELL, B.A.Sc.	Post-Graduate Course, Cambridge, Mass.	Harvard University.
1. L. T. BRAY, D. & O.L.S.	Surveyor. Amherstburg, Ont.	
3. J. CLARK	Electrician, McKee's Rocks, Pa.	P. & L. E. Power House.
2. J. E. DAVISON, B.A.Sc.	Engineering Staff, Can. Northern Toronto, Ont.	Ry.
3. E. D. DICKINSON	With General Electric Co. Schenectady, N.Y.	
3. G. W. DICKSON, B.A.Sc.	Mechanical Engineer, Can. Portable Toronto, Ont.	Fence Co.
2 *H. A. DIXON, B.A.Sc., O.L.S....	Engineering Staff, Winnipeg, Man.	Can. Northern Ry.
2. C. H. FULLERTON	Firm of Dunn and Fullerton, Winchester, Ont.	Civil Engineers.
3. W. S. GUEST	Draftsman, Jenckes Machine Co. Sherbrooke, Que.	
3 W. HEMPHILL, B.A.Sc.	With Cataract Power and Conduit 718 Fidelity Bldg., Buffalo, N.Y.	Co.
3. S. E. M. HENDERSON	Designing Engineer, Schenectady, N.Y.	General Electric Co.
3. J. A. HENRY	Engineering Dept., Schenectady, N.Y.	General Electric Co.
2. H. S. HOLCROFT, B.A.Sc., D.L.S.	Surveyor. Toronto, Ont.	
3. H. A. JOHNSTON	Mechanical Engineer, Toronto, Ont.	148 Clinton St.
3. J. C. JOHNSTON,	City Engineer's Staff. Toronto, Ont.	
2. *J. A. JOHNSTON, B.A.Sc.	Transitman, Party No. 7. North Bay, Ont.	G. T. P. Ry. Survey.
2. R. E. McARTHUR	Resident Engineer, C.P.R. Calgary, Assa.	
2. J. G. McMILLAN, B.A.Sc.	Fellow in Mining Toronto, Ont.	School of Practical Science.
3. L. HAUN MILLER	With Wellman-Sever & Morgan Cleveland, O.	Engineering Co.

* Diploma with honours.

1900.—Continued.

Course.	Name and address.	Occupation.
2.	E. V. NEELANDS, B.A.Sc.	Supt. Black Queen Crystal, Colo. Mining & Milling Co.
1.	*E. H. PHILLIPS, D.L.S.	Topographical Surveys Branch, Ottawa, Ont. Dept. of the Interior.
2.	J. R. ROAF, B.A.Sc.	Draftsman, Crow's Nest Pass Coal Michel, B.C. Co.
3.	*C. H. E. ROUNTHWAITE	Draftsman, North Bay, Ont. Party No. 1 G.T.P. Ry.
2.	H. W. SAUNDERS, B.A.Sc.	Engineering Dept., Gary, W. Va. U.S. Coal & Coke Co.
1.	A. TAYLOR	With C.P.R. Land Department. Winnipeg, Man.
1.	W. C. TENNANT, B.A.Sc.	(Deceased.)
2.	S. M. THORNE, B.A.Sc.	Engineering Staff, Niagara Falls, Ont. The Ontario Power Co.
1.	F. W. THOROLD, B.A.Sc.	City Engineer. Calgary, Alta.
1.	H. M. WEIR, B.A.Sc.	With Londonderry Iron & Mining Londonderry, N.S. Co.
3.	F. D. WITHROW	Department of Public Works of Toronto, Ont. Canada.

1901.

1.	R. H. BARRETT, B.A.Sc., O.L.S..	(Deceased.)
3.	W. G. BEATTY	Manager, Beatty Bros., Implement Fergus, Ont. Manufacturers.
3.	G. M. BERTRAM	Office of the Sullivan Machinery Co. 71 Broadway, New York.
3.	W. J. BOWERS	Assistant Engineer, Toronto, Ont. Office of John Galt, C.E., & M.E.
3.	E. T. J. BRANDON, B.A.Sc.	Engineering Staff, Niagara Falls. Ontario Power Co.
3.	W. P. BRERETON, B.A.Sc.	McLachlan Gasoline Engine Co. Toronto, Ont.
3.	J. T. BROUGHTON	Draftsman, Mesta Machine Co. Pittsburgh, Pa.
3.	*W. G. CHACE, B.A.Sc.	Engineer on Construction, Niagara Falls, Ont. International Ry. Co.

* Diploma with honours.

1901.—Continued.

Course.	Name and address.	Occupation.
3.	A. G. CHRISTIE Ithaca, N.Y.	Instructor in Mechanical Engineer- ing, Cornell University.
3.	J. R. COCKBURN, B.A.Sc. Toronto. Ont.	Demonstrator in Drawing, School of Practical Science.
1.	W. A. DUFF, Walkerville, Ont.	Draftsman, Canadian Bridge Co.
2.	*D. E. EASON, B.A.Sc... .. Peterboro, Ont.	Engineering Staff, Trent Valley Canal.
1.	*S. GAGNE, B.A.Sc. Toronto, Ont.	Office of W. T. Jennings, C.E., Consulting Engineer.
3.	N. R. GIBSON, B.A.Sc..... Niagara Falls, Ont.	Engineering Staff, Ontario Power Co.
1.	C. HARVEY, B.A.Sc., D.L.S... .. Kelowna, B.C.	Consulting Engineer and Surveyor.
2.	A. T. E. HAMER... .. Toronto, Ont.	Managing Director, North Shore Copper & Smelting Co., Ltd.
2.	F. C. JACKSON..... North Bay, Ont.	Res. Engineer, Temiskaming and Northern Ontario Ry.
3.	*A. LAIDLAW Jackson, Mich.	Peninsular Engineering & Construction Co.
3.	W. C. LUMBERS..... Toronto, Ont.	Agent, Lee Electric Insole Co.
3.	A. C. MACDOUGALL..... Massena, N. Y.	Asst. Supt., Pittsburgh Reduction Co.
3.	A. T. C. McMASTER, B.A.Sc..... Clifton, Arizona.	Assistant Engineer, Arizona Copper Co.
1.	G. MacMILLAN Winnipeg, Man.	
3.	*H. G. McVEAN, B.A.Sc. Toronto, Ont.	Demonstrator in Mechanical Engi- neering, School of Practical Science.
2.	W. C. MATHESON..... Toronto, Ont.	With McKenzie, Mann Co.
3.	H. T. MIDDLETON Massena, N.Y.	Assistant Superintendent, Indestructible Fibre Co.
2.	J. L. R. PARSONS, B.A., D.L.S... Toronto, Ont.	Fellow in Surveying, School of Practical Science.
1.	G. H. POWER... .. Toronto, Ont.	Office of Willis Chipman, C.E.

* Diploma with honours

1901.—Continued.

Course.	Name and address.	Occupation.
3.	*H. W. PRICE, B.A.Sc..... Toronto, Ont.	Demonstrator in Electrical Engineering, School of Practical Science.
1.	H. P. RUST, B.A.Sc..... Niagara Falls, Ont.	Engineering Staff, Canadian Niagara Power Co.
3.	M. V. SAUER, B.A.Sc..... Niagara Falls, Ont.	Engineering Staff, Ontario Power Co.
3.	W. H. STEVENSON, B.A.Sc..... Chicago, Ill.	General Inspector, Griffin Wheel Co.
1.	R. D. WILLSON Winnipeg, Man.	Engineering Staff, Canadian Northern Ry. Co.

1902.

3.	*H. G. BARBER..... Ottawa, Ont.	Topographical Survey's Branch, Department of the Interior.
1.	W. J. BLAIR, B.A.Sc., D.&O.L.S..... New Liskeard, Ont.	Engineer and Land Surveyor.
3.	J. M. BROWN..... Pittsburgh, Pa.	With Westinghouse Machine Co., Steam Turbine Dept.
2.	W. G. CAMPBELL.....	
2.	A. R. CAMPBELL Toronto, Ont.	Office of Willis Chipman, C.E.
3.	C. G. CARMICHAEL Cincinnati, O.	Testing Department. Bullock Electric Mfg. Co.
2.	*W. CHRISTIE, B.A.Sc..... Markerville, Alta.	Asst. to H. W. Selby, D.L.S.
2.	F. T. CONLON..... Thorold, Ont.	Welland Canal Engineering Staff.
3.	H. V. CONNOR..... Pittsburgh, Pa.	With Westinghouse Electric & Mfg. Co.
2.	*M. T. CULBERT..... 784 Wellington St., London, Ont.	Mining Engineer.
2.	R. CUMMING..... Port Arthur, Ont.	Engineer for Grant & Co., Con- tractors.
1.	W. E. DOUGLAS, B.A..... Toronto, Ont.	Office of Willis Chipman, C.E.
3.	*R. J. DUNLOP..... Toronto, Ont.	With Canadian Westinghouse Co.

* Diploma with honours.

1902.—Continued.

Course.	Name and address.	Occupation.
2.	W. M. EDWARDS, B.A.Sc... ..	With Hamilton & Brantford Ry. Company.
3.	W. ELWELL.....	Toronto, Ont.
2.	J. M. EMPEY, B.A.Sc., D.L.S...	Topographical Survey's Branch, Dept. of the Interior.
2.	*D. L. H. FORBES.....	Chief Engineer, Arizona Copper Co.
1.	*A. E. GIBSON, B.A.Sc... ..	Fellow in Civil Engineering, School of Practical Science.
3.	A. C. GOODWIN... ..	Draftsman, Pittsburgh Reduction Co.
3.	C. HENWOOD	Draftsman, Westinghouse Machine Co.
3.	D. M. JOHNSTON.....	Manager, Volta Electric Co.
2.	R. H. KNIGHT, B.A.Sc., D.L.S.	Engineer and Surveyor.
5.	*F. L. LANGMUIR, B.A.Sc.....	*Post-Graduate Course in Chemistry.
3.	A. H. McBRIDE, B.A.Sc... ..	Asst. to R. J. Parke, Consulting Electrical Engineer.
1.	A. L. McLENNAN, D.L.S....	Office of J. McDougall, C.E., York Co. Engineer.
3.	J. T. MACKAY	Student in Faculty of Medicine, University of Toronto.
3.	J. F. S. MADDEN.....	Erecting Engineering Dept., Can. Gen. Electric Co.
3.	*C. H. MARRS.....	Draftsman, Hamilton Bridge Works Co.
3.	P. MATHISON, B.A.Sc.....	With Westinghouse Electric & Mfg. Co.
3.	R. S. MENNIE.....	Draftsman, Riter-Conley Mfg. Co.
2.	H. H. MOORE, D.L.S.....	Engineer and Surveyor.
1.	*T. S. NASH.....	Topographical Survey's Branch, Department of the Interior.

*Diploma with honors.

1903.—*Continued.*

Course.	Name and address.	Occupation.
1.	F. F. CLARKE, O.L.S..... Winchester, Ont.	Engineer and Surveyor.
2.	C. L. COULSON..... Welland, Ont.	Assistant to Geo. Ross, C.E.
3.	*A. E. DAVISON..... Toronto, Ont.	Post-Graduate Course, School of Practical Science.
3.	C. J. FENSOM, B.A.Sc.... Toronto, Ont.	Engineering Department, Fensom Elevator Co., Ltd.
2.	*E. O. FUCE..... Berlin, Ont.	Office of M. M. Davis, O.L.S.
3.	*F. A. GABY, B.A.Sc..... Toronto, Ont.	Engineering Department, Canadian General Electric Co.
3.	R. E. GEORGE..... Dover, N.H.	Electrical and Gas Engineer, The United Gas & Electric Co.
1.	J. C. GARDNER, B.A.Sc..... Toronto, Ont.	Office of W. T. Jennings, C.E., Consulting Engineer.
1.	*P. GILLESPIE, B.A.Sc..... Toronto, Ont.	Demonstrator in Applied Mechanics, School of Practical Science.
1.	W. A. GOURLAY..... Toronto, Ont.	Office of W. T. Jennings, C.E., Consulting Engineer.
2.	J. F. HAMILTON, B.A.Sc..... Dunedin, Ont.	
2.	G. S. HANES..... Toronto, Ont.	Post-Graduate Course, School of Practical Science.
5.	J. A. HORTON..... Toronto, Ont.	Lecture Assistant in Chemistry, School of Practical Science.
2.	F. Y. HARCOURT B.A..... Niagara Falls, Ont.	Ontario Niagara Falls Power Co.
1.	L. J. HAYES..... Toronto, Ont.	Structural Department, Canada Foundry Co.
1.	*F. D. HENDERSON..... Ottawa, Ont.	Topographical Survey's Branch, Dept. of the Interior.
3.	J. G. JACKSON..... 55 Duane St., New York, N.Y.	Engineering Dept., New York Edison Co.
3.	C. K. JOHNSTON..... Winnipeg, Man.	G. T. P. Railways Surveys.

* Diploma with honors.

1903.—*Continued.*

Course.	Name and address.	Occupation.	
1.	H. JOHNSTON.....	Office of M. M. Davis, O.L.S. Berlin, Ont.	
3.	A. G. LANG.....	Student, 357 West 117th St., New York, N. Y.	Columbia University.
1.	*A. J. LATORNELL	Office of Division Engineer, C.P.R. Ottawa, Ont.	
1.	*H. J. MCAUSLAN	Post-Graduate Course, Toronto, Ont.	School of Practical Science.
3.	J. A. McFARLANE, B.A.Sc.....	Fellow in Mechanical Engineering, Toronto, Ont.	School of Practical Science.
1.	*A. L. McNAUGHTON	Topographical Survey's Branch, Ottawa, Ont.	Dept. of the Interior.
5.	F. G. MARRIOTT.....	Post-Graduate Course, Toronto, Ont.	School of Practical Science.
3.	*C. A. MAUS	Paris, Ont.	
3.	*M. L. MILLER	Draftsman, International Hamilton, Ont.	Harvester Co.
2.	*R. H. MONTGOMERY, D.L.S. ...	Post-Graduate Course, Toronto, Ont.	School of Practical Science.
1.	F. A. MOORE.....	Topographical Survey's Branch, Ottawa, Ont.	Dept. of the Interior.
3.	E. E. MULLINS.....	Baldwin Locomotive Works. Philadelphia, Pa.	
3.	I. H. NEVITT, B.A.Sc.....	Office of City Engineer. Toronto, Ont.	
1.	E. W. OLIVER, B.A.Sc.....	Engineering Staff, Winnipeg, Man.	Can. Northern Ry.
3.	J. P. OLIVER.....	Riter-Conley Mfg. Co. Pittsburgh, Pa.	
3.	J. D. PACE, B.A.Sc.....	With Ragged Rapids Hydraulic Orillia, Ont.	Electric Plant.
3.	B. B. PATTEN, B.A.Sc.....	Civil Engineering Course, Toronto, Ont.	School of Practical Science.
2.	D. H. PHILIP... ..	Topographical Survey's Branch, Ottawa, Ont.	Dept. of the Interior.
3.	*D. H. PINKNEY	Draftsman, National Tube Dept., Lorain, O.	U.S. Steel Corporaton.

* Diploma with honors.

1903.—Continued.

Course.	Name and address.	Occupation.
2.	T. H. PLUNKETT, B.A.Sc..... Meaford, Ont.	
1	*H. L. SEYMOUR Ottawa, Ont.	Topographical Survey's Branch. Dept. of the Interior.
3	*H. M. SHIPE Toronto, Ont.	Post-Graduate Course, School of Practical Science.
1.	J. H. SMITH, D. & O.L.S... Pembroke, Ont.	Engineer and Surveyor.
3.	H. G. SMITH, B.A.Sc..... Toronto, Ont.	Fellow in Electrical Engineering, School of Practical Science.
3.	S. L. TREES, B.A.Sc..... Toronto, Ont.	Samuel Trees & Co., 42 Wellington St. E.
1.	J. WALDRON..... Niagara Falls, Ont.	Asst. to T. Fawcett, D.L.S.
3.	*S. B. WASS Toronto, Ont.	Office of Jas. McDougall, County Engineer.
3.	J. A. WHELIHAN..... Glen Ridge, N.J.	Edison Storage Battery Co.
3.	H. F. WHITE..... Toronto, Ont.	Post-Graduate Course School of Practical Science.
2.	*C. G. WILLIAMS Toronto, Ont.	Post-Graduate Course, School of Practical Science.
1	*N. D. WILSON, B.A.Sc. Toronto, Ont.	Fellow in Surveying, School of Practical Science.
1.	*C. R. YOUNG Toronto, Ont.	Post-Graduate Course, School of Practical Science.

1904.

3	*ALEXANDER, J. H. 328 St. Joseph St., Lachine, P.Q.	Draftsman, Dominion Bridge Co.
3.	*BARRETT, J. H. Toronto, Ont.	With The Wm. Davies Co., Ltd.
3.	BONNELL, M. B. Toronto, Ont.	Post Graduate Course, School of Practical Science.
3.	BROWN, T. D. Barrie, Ont.	

* Diploma with honors.

1904.—Continued.

Course.	Name and address.	Occupation.
3.	CALDER, J. W.	Post-Graduate Course, Toronto, Ont. School of Practical Science.
1.	CAMPBELL, A. J.	Post-Graduate Course, Toronto, Ont. School of Practical Science.
	CAMERON, N. C.	With Ross & Holgate, Consulting Montreal. Electrical and Mechanical En- gineers.
3.	*CAMPBELL, A. M.	Post-Graduate Course, Toronto, Ont. School of Practical Science.
4.	CHALLIES, J. B.	Topographical Surveys Branch, Ottawa, Ont. Dept. of the Interior.
2.	CHILVER, C. A.	Assistant to W. J. Tyrrell. Hamilton, Ont.
1.	CHRISTIE, U. W.	Post-Graduate Course, Toronto, Ont. School of Practical Science.
2.	COATES, P. C.	Post-Graduate Course, Toronto, Ont. School of Practical Science.
1.	CODE, S. B.	Office of J. H. Moore, Smith's Falls, Ont. Engineer and Surveyor.
1.	*CODE, T. F.	Post-Graduate Course, Toronto, Ont. School of Practical Science.
1.	*COWAN, W. A.	C. F. R. Engineering Staff. Toronto, Ont.
3.	*CRAIG, S. E.	Engineering Dept., G. T. Ry. Stratford, Ont.
1.	*CRERAR, S. R.	Post-Graduate Course, Toronto, Ont. School of Practical Science.
3.	CURRIE, W. M.	Chief Inspector and Engineer, Hamilton, Ont. Hamilton Steel & Iron Co.
3.	DEPEW, H. H.	Post-Graduate Course, Toronto, Ont. School of Practical Science.
2.	FLECK, J. G. ...	Lumbering. Madawaska, Ont.
1.	*FORD, A. L.	Post-Graduate Course, Toronto, Ont. School of Practical Science.
3.	GIBSON, W. S.	Post-Graduate Course, Toronto, Ont. School of Practical Science.
3.	GRAY, W. W.	Post-Graduate Course, Toronto, Ont. School of Practical Science.

* Diploma with honors.

1903.—Continued.

Course.	Name and address.	Occupation.
3.	GREENWOOD, W. K. Toronto, Ont.	Post-Graduate Course, School of Practical Science.
1.	HARA, L. D. St. Catharines, Ont.	Leveller and Draughtsman, Welland Canal Co.
1.	HARRIS, C. J. Brantford, Ont.	Brantford Screw Co.
1.	HERON, J. B. Dinorwic, Ont.	Engineering Staff, G. T. Ry.
1.	HILL, E. M. M. Guelph, Ont.	
2.	HILL, S. N. Ottawa, Ont.	Topographical Surveys Branch, Dept. of the Interior.
2.	INLGES, C. J. Toronto, Ont.	Office of Willis Chipman, C.E., Consulting Engineers.
1.	JAMES, E. A. Toronto, Ont.	Post-Graduate Course, School of Practical Science.
1.	JERMYN, P. V. Toronto, Ont.	Post-Graduate Course, School of Practical Science.
3	KEEFE, W. S. H. Fort Covington, N.Y.	Manager Light, Heat & Power Co.
3.	LARKWORTHY, W. J. Toronto, Ont.	Post-Graduate Course, School of Practical Science.
3	MCCUAIG, O. B. Toronto, Ont.	Post-Graduate Course, School of Practical Science.
1	MC EWEN, G. G. Toronto, Ont.	Post-Graduate Course, School of Practical Science.
1.	*MCFARLANE, W. G., B.A. Toronto, Ont.	Post-Graduate Course, School of Practical Science.
3	*MCGIBBON, C. P., B.A. Toronto, Ont.	Post-Graduate Course, School of Practical Science.
3.	McKAY, C. Toronto, Ont.	Post-Graduate Course, School of Practical Science.
1	McMILLAN, D. Woodville, Ont.	
3.	MANSON, G. J. Toronto, Ont.	Fellow in Electrical Engineering, School of Practical Science.
1	*MOORHOUSE, W. N. Hamilton, Ont.	Asst. Engineer, Hamilton & Brantford Ry.

* Diploma with honors.

1904.—Continued.

Course.	Name and address.	Occupation.
3.	MOORE, E. E. Can. Gen. Electric Co. Peterboro, Ont.	
3.	MUNRO, W. H. Wm. Hamilton Mfg. Co. Peterboro, Ont.	
3.	PACE, G. Post-Graduate Course, Toronto, Ont.	School of Practical Science.
3.	PARDOE, W. S. Pump Dept., Canada Foundry. Toronto, Ont.	
3.	PARIS, J. Inspector, Temiskaming & North Bay, Ont.	Northern Ontario Railway.
2.	PARKE, J. Post-Graduate Course, Toronto, Ont.	School of Practical Science.
3.	PEAKER, W. J. Post-Graduate Course, Toronto, Ont.	School of Practical Science.
3.	*PICKERING, A. E. Draughtsman, Sault Ste. Marie, Ont.	Lake Superior Power Co.
1.	RAYMOND, D. L. C. Post-Graduate Course, Toronto, Ont.	School of Practical Science.
3.	*RIDDELL, M. R. Fellow in Drawing, Toronto, Ont.	School of Practical Science.
3.	ROXBURGH, G. S. Post-Graduate Course, Toronto, Ont.	School of Practical Science.
2.	RUTHERFORD, F. N. Post-Graduate Course, Toronto, Ont.	School of Practical Science.
1.	*SHEPLY, J. D. Post-Graduate Course, Toronto, Ont.	School of Practical Science.
3.	*SMART, R. S. Manager, Office of Fetherston- Ottawa, Ont.	haugh & Co., Patent Solicitors, Engineers, etc.
3.	SMITHER, W. J. Post-Graduate Course, Toronto, Ont.	School of Practical Science.
3.	SLATER, F. W. Inspector, Fire Prevention Appli- Toronto, Ont.	cances, Can. Fire Underwriter's Ass'n.
3.	THOMSON, S. E. Post-Graduate Course, Toronto, Ont.	School of Practical Science.
3.	TOWNSEND, C. J. Post-Graduate Course, Toronto, Ont.	School of Practical Science.
1.	TOWNSEND, D. T. Post-Graduate Course, Toronto, Ont.	School of Practical Science.

* Diploma with honors.

904.—*Continued.*

Course.	Name and address.	Occupation.
1.	TRIMBLE, A. V.	Post-Graduate Course, Toronto, Ont. School of Practical Science.
3.	TUCKER, B. B.	Post-Graduate Course, Toronto, Ont. School of Practical Science.
2	*WADE, E.	Fellow in Chemistry, Toronto, Ont. School of Practical Science.
1.	*WALKER, E. W.	Post-Graduate Course, Toronto, Ont. School of Practical Science.
3	WATSON, J. P.	Special Apprentice, Omaha, Neb. Union Pacific R. R. Shops.
1.	WEIR, J. M.	Engineering Staff, G. T. Ry. Hamilton, Ont.
1.	*WELLS, A. F., O.L.S.	With H. Jackson, City Engineer. Niagara Falls, Ont.
1	WORTHINGTON, W. R.	Post-Graduate Course, Toronto, Ont. School of Practical Science.
3	WRIGHT, W. F.	Post-Graduate Course, Toronto, Ont. School of Practical Science.

CERTIFICATES.

MINERALOGY AND ASSAYING.

Date.	Name and Address.	Occupation.
1896.	G. Johnston	
1896.	A. T. Tye	
1897.	E. B. Webster.....	
1898.	A. N. McMillan	
	Penetanguishene, Ont.	
1900.	A. H. Smith	Supt. Los Reyes Gold Mining & Oaxaca, Mexico. Milling Co.
1901.	G. A. Hunt	

ELECTRICITY.

1896.	E. I. Sifton	Manager London Electric Con- struction Co.
1903.	W. Elwell.....	
	Toronto, Ont.	

* Diploma with honors.

INDEX TO GRADUATES.

In the following alphabetical list of the Graduates is given the year of graduation of each student. In the preceding list, which is arranged by classes in the order of graduation, may be found additional information as to occupation, addresses, etc.

A.

Acres, H. G....	1903	Angus, R. W. ...	1894
Alexander, J. H. ...	1904	Angus, H. H. ...	1903
Alison, T. H. ...	1892	Apsey, J. F....	1888
Allan, J. R....	1892	Ardagh, J. A. ...	1893
Allan, J. L....	1900	Ardagh, E. G. R. ...	1900
Anderson, A. G....	1892	Armstrong, J. ...	1895
Andrews, E. ...	1897	Ashbridge, W. T. ...	1888

B.

Bain, J. A....	1900	Bowman, H. J. ...	1885
Bain, J. W. ...	1896	Bowman, F. M. ...	1890
Ball, E. F. ...	1888	Bowman, A. M....	1886
Ballantyne, H. F. ...	1893	Boyd, D. G. ...	1894
Barber, H. G. ...	1902	Boyd, W. H. ...	1898
Barber, T. ...	1899	Brandon, E. T. J. ...	1901
Barker, H. P. ...	1893	Bray, L. T. ...	1900
Barley, J. H. ...	1900	Brebner, G....	1895
Barrett, R. H. ...	1901	Brereton, W. P....	1901
Barrett, J. H. ...	1904	Breslove, J. ...	1903
Beatty, H. J. ...	1890	Brodie, W. M. ...	1895
Beatty, W. G. ...	1901	Broughton, J. T. ...	1901
Beatty, J. A. ...	1903	Brown, J. M. ...	1902
Beauregard, A. T. ...	1894	Brown, D. B. ...	1888
Bergey, A. E. ...	1894	Brown, G. L. ...	1893
Bertram, G. M. ...	1901	Brown, L. L. ...	1895
Blackwood, A. E. ...	1895	Brown, T. D. ...	1904
Blair, W. J....	1902	Bucke, M. A. (deceased)	1890
Bleakley, J. F. ...	1885	Bucke, W. A. ...	1894
Bonnell, M. B. ...	1904	Burd, J. H....	1903
Boswell, E. J. ...	1895	Burgess, E. L. ...	1903
Boswell, M. C....	1900	Burns, D....	1883
Boustead, W. E. (deceased)	1890	Burns, J. C. (deceased)	1887
Bow, J. A. ...	1897	Burnside, J. T. M. ...	1899
Bowers, W. J. ...	1901	Burwash, L. T. ...	1896

C.

Calder, J. W. ... 1904
 Cameron, N. C. ... 1904
 Campbell, A. J. ... 1904
 Campbell, A. M. ... 1904
 Campbell, W. G. ... 1902
 Campbell, A. R. ... 1902
 Campbell, R. J. ... 1895
 Campbell, G. M. ... 1896
 Canniff, C. M. ... 1888
 Carey, B. ... 1899
 Carmichael, C. G. ... 1902
 Carpenter, H. S. ... 1897
 Carter, W. E. H. ... 1898
 Chace, W. G. ... 1901
 Challies, J. B. ... 1904
 Chalmers, W. J. ... 1889
 Chalmers, J. ... 1894
 Charlesworth, L. C. ... 1893
 Charlton, H. W. ... 1897
 Chewett, H. J. ... 1888
 Chilver, C. A. ... 1904
 Christie, W. ... 1902
 Christie, U. W. ... 1904
 Christie, A. G. ... 1901

Chubbuck, L. B. ... 1899
 Clark, J. ... 1900
 Clarke, F. F. ... 1903
 Clement, W. A. ... 1889
 Clothier, G. A. ... 1899
 Coates, P. C. ... 1904
 Cockburn, J. R. ... 1901
 Code, S. B. ... 1904
 Code, T. F. ... 1904
 Conlon, F. T. ... 1902
 Connor, H. V. ... 1902
 Connor, A. W. ... 1895
 Cooper, C. ... 1899
 Corrigan, G. D. (deceased). 1890
 Coulson, C. L. ... 1903
 Coulthard, R. W. ... 1899
 Cowan, W. A. ... 1904
 Craig, J. A. ... 1899
 Craig, S. E. ... 1904
 Crerar, S. R. ... 1904
 Culbert, M. T. ... 1902
 Cumming, R. ... 1902
 Currie, W. M. ... 1904

D.

Darling, E. H. ... 1898
 Davison, J. E. ... 1900
 Davison, A. E. ... 1903
 Deacon, T. R. ... 1891
 DeCew, J. A. ... 1896
 Depew, H. H. ... 1904
 Dickson, G. W. ... 1900
 Dickinson, E. D. ... 1900
 Dill, C. W. ... 1891

Dixon, H. A. ... 1900
 Dobie, J. S. ... 1895
 Douglas, W. E. ... 1902
 Duff, J. A. (deceased)... 1890
 Duff, W. A. ... 1901
 Duggan, G. H. ... 1883
 Dunlop, R. J. ... 1902
 Dunn, T. H. ... 1893

E.

Eason, D. E. ... 1901
 Edwards, W. M. ... 1902
 Elliott, H. P. ... 1896
 Elliot, J. C. ... 1899

Elwell, W. ... 1902
 Empey, J. M. ... 1902
 English, A. B. (deceased).. 1890
 Ewart, J. A. ... 1894

F.

Fairbairn, J. M. R. ... 1893
 Fairchild, C.... ... 1892
 Fensom, C. J. 1903
 Fingland, W. 1893
 Fleck, J. G. 1904
 Forbes, D. L. H. 1902
 Ford, A. L.... ... 1904

Forester, C.... ... 1893
 Forman, W. E. 1899
 Forward, E. A.... ... 1897
 Francis, W. J.... ... 1893
 Fuce, E. O.... ... 1903
 Fullerton, C. H. 1900

G.

Gaby, F. A. 1903
 Gagne, S. 1901
 Gardner, J. C. 1903
 Garland, N. L.... ... 1890
 George, R. E. 1903
 Gibbons, J. 1888
 Gibson, A. E. 1902
 Gibson, N. R. 1901
 Gibson, W. S. 1904
 Gillespie, P. 1903
 Goldie, A. R. 1893
 Goodwin, A. C. 1902

Goodwin, J. B.... ... 1892
 Gordon, J. P. 1904
 Gourlay, W. A.... ... 1903
 Grant, W. F. 1898
 Gray, A. T.... ... 1897
 Gray, W. W.... ... 1904
 Greenwood, W. K.... ... 1904
 Guernsey, F. W. 1895
 Gurney, W. C.... ... 1896
 Guest, W. S. 1900
 Guy, E. 1899

H.

Haight, H. V. 1896
 Hamer, A. T. E. 1901
 Hamilton, J. F.... ... 1903
 Hanly, S. C.... ... 1893
 Hanes, G. S. 1903
 Hanning, G. F.... ... 1889
 Hara, L. D.... ... 1904
 Harcourt, F. Y., B.A.... 1903
 Hare, W. A.... ... 1899
 Harkness, A. H. 1895
 Harris, C. J. 1904
 Harvey, C. 1901
 Haultain, H. E. T. ... 1889
 Hayes, L. J.... ... 1903
 Hemphill, W. 1900

Henderson, E. E. 1885
 Henderson, F. D. 1903
 Henderson, S. E. M. ... 1900
 Henry, J. A. 1900
 Henwood, C. 1902
 Herald, W. J.... ... 1894
 Hermon, E. B.... ... 1886
 Heron, J. B.... ... 1904
 Hicks, W. A. B. 1897
 Hill, E. M. M.... ... 1904
 Hill, S. N. 1904
 Holcroft, H. S.... ... 1900
 Horton, J. A. 1903
 Hull, H. S. 1895
 Hutcheon, J. 1890

I.

Ingles, C. J. 1904
 Innis, W. L. 1890

Irvine, J. 1889

J.

Jackson, J. G.1903
 Jackson, F. C.1901
 James, O. S.... ..1891
 James, D. D.1889
 James, E. A.... ..1904
 Jeffrey, D.1882
 Jermyn, P. V.1904
 Job, H. E.1894
 Johnston, D. M.1902

Johnston, H.1903
 Johnston, A. C.... ..1894
 Johnston, S. M.... ..1894
 Johnston, H. A.1900
 Johnston, J. C.... ..1900
 Johnston, J. A.1900
 Johnston, C. K.1903
 Jones, J. E.1894

K.

Keefe, W. S. H.1904
 Keele, J.... ..1893
 Kennedy, J. H.... ..1882
 King, C. F.1897

Kirkland, W. C.1884
 Korman, T. S.1898
 Knight, R. H.1902

L.

Laidlaw, J. T.1893
 Laidlaw, A.1901
 Laing, W. F.1896
 Laing, A. T.1892
 Laird, R.1886
 Lane, A. (deceased).. ..1891
 Lang, A. G.1903
 Langmuir, F. L.... ..1902
 Langley, C. E.... ..1892
 Larkworthy, W. J.... ..1904
 Laschinger, E. J.... ..1892

Lash, F. L.... ..1893
 Lash, N. M.1894
 Latham, R.1899
 Latornell, A. J.... ..1903
 Lavrock, J. E.1898
 Lawson, W.1892
 Lawrie, R. R. (deceased)...1896
 Lea, W. A. (deceased)1892
 Lott, A. E.1887
 Ludgate, B. A.1885
 Lumbers, W. C.... ..1901

Mac.

MacBeth, C.... ..1896
 MacKay, J. T.1902
 MacMillan, C.1901

Maccallum, A. F.1893
 Macdougall, A. C.1901
 Mackintosh, D.... ..1898

Mc.

McAllister, J. E.1891
 McAllister, A. L.1893
 McAree, J. (deceased)... ..1882
 McArthur, R. E.1900
 McAuslan, H. J.... ..1903
 McBride, A. H.... ..1902

McGibbon, C. P.1904
 McGowan, J.... ..1895
 McKay, O.1885
 McKay, W. N.... ..1895
 McKay, C.1904
 McKinnon, H. L.1895

Mc.—Continued.

McCuaig, O. B. ... 1904
 McCulloch, A. L. ... 1887
 McDougall, J. ... 1884
 McDowall, R. ... 1888
 McEntee, B. ... 1892
 McEwen, G. G. ... 1904
 McFarlane, J. A. ... 1903
 McFarlane, W. G. ... 1904
 McFarlen, G. W. ... 1888
 McFarlen, T. J. ... 1893

McLennan, A. L. ... 1902
 McMaster, A. T. C. ... 1901
 McMillan, J. C. ... 1900
 McMillan, D. ... 1904
 McMurchy, J. A. ... 1896
 McNaughton, A. L. ... 1903
 McNaughton, F. W. ... 1898
 McPherson, A. J. ... 1893
 McTaggart, A. L. ... 1894
 McVean, H. G. ... 1901

M.

Madden, J. F. S. ... 1902
 Main, W. T. ... 1893
 Manson, G. J. ... 1904
 Marani, C. J. ... 1888
 Marani, V. G. ... 1893
 Marriot, F. G. ... 1903
 Marrs, C. H. ... 1902
 Martin, F. ... 1887
 Martin, T. ... 1896
 Matheson, W. C. ... 1901
 Mathison, P. ... 1902
 Maus, C. A. ... 1903
 Middleton, H. T. ... 1901
 Mickle, G. R. ... 1888
 Merrill, E. B. ... 1890
 Mennie, R. S. ... 1902
 Meadows, W. W. ... 1895
 Minty, W. ... 1894

Mill, F. X. (deceased) ... 1889
 Miller, L. Haun ... 1900
 Miller, M. L. ... 1903
 Milne, C. G. ... 1892
 Mines, W. ... 1893
 Mitchell, C. H. ... 1892
 Moberley, H. K. ... 1889
 Monds, W. ... 1899
 Montgomery, R. H. ... 1903
 Moore, H. H. ... 1902
 Moore, E. E. ... 1904
 Moore, J. H. ... 1888
 Moore, J. E. A. ... 1891
 Moore, F. A. ... 1903
 Moorhouse, W. N. ... 1904
 Morris, J. L. ... 1881
 Mullins, E. E. ... 1903
 Munro, W. H. ... 1904

N.

Nash, T. S. ... 1902
 Neelands, E. V. ... 1900
 Newman, W. ... 1891

Nevitt, I. H. ... 1903
 Nicholson, C. J. ... 1894

O.

Oliver, E. W. ... 1903

Oliver, J. P. ... 1903

P.

Pace, J. D. ... 1903
 Pace, G. ... 1904
 Pardoe, W. S. ... 1904
 Paris, J. ... 1904
 Parke, J. ... 1904
 Parsons, J. L. R. ... 1901
 Patten, B. B. ... 1903
 Patterson, J. ... 1899
 Peaker, W. J. ... 1904
 Pedder, J. R. (deceased)...1890
 Plunkett, T. H. ... 1903
 Pope, A. S. H. ... 1899

Powell, G. G. ... 1902
 Power, G. H. ... 1901
 Philp, D. H. ... 1903
 Philips, E. H. ... 1900
 Pickering, A. E. ... 1904
 Pinhey, C. H. ... 1887
 Pinkney, D. H. ... 1903
 Playfair, N. L. ... 1892
 Prentice, J. M. (deceased).1892
 Price, H. W. ... 1901
 Proudfoot, H. W. ... 1897

R.

Ratz, W. F. ... 1902
 Raymer, A. R. ... 1884
 Raymond, D. C. ... 1904
 Revell, G. E. ... 1899
 Richards, E. ... 1899
 Richardson, G. H. ... 1888
 Riddell, M. R. ... 1904
 Roaf, J. R. ... 1900
 Rogers, J. ... 1887
 Rolph, H. ... 1894
 Rose, K. ... 1888
 Rosebrugh, T. R. ... 1889
 Ross, J. E. ... 1888
 Ross, R. A. ... 1890

Robertson, H. D. ... 1902
 Robertson, J. ... 1884
 Robertson, J. M. ... 1893
 Robinson, J. (deceased) ...1891
 Robinson, F. J. ... 1895
 Robinson, A. H. A. ... 1897
 Ross, J. A. ... 1892
 Roxburgh, G. S. ... 1904
 Rounthwaite, C. H. E. ...1900
 Russel, W. B. ... 1891
 Russel, R. ... 1893
 Rust, H. P. ... 1901
 Rutherford, F. N. ... 1904

S.

Sauer, M. V. ... 1901
 Saunders, G. A. ... 1899
 Saunders, H. W. ... 1900
 Scott, W. F. ... 1897
 Seymour, H. L. ... 1903
 Shanks, T. ... 1899
 Shaw, J. H. ... 1893
 Sheply, J. D. ... 1904
 Shields, J. D. ... 1894
 Shipe, R. R. ... 1896
 Shipe, H. M. ... 1903
 Shipley, A. E. ... 1898
 Silvester, G. E. ... 1891
 Sinclair, D. ... 1902

Smith, A. N. ... 1892
 Smith, A. ... 1894
 Smith, H. G. ... 1903
 Smith, R. W. ... 1898
 Smith, J. H. ... 1903
 Smither, W. J. ... 1904
 Speller, F. N. ... 1893
 Spotton, A. K. ... 1894
 Squire, R. H. ... 1893
 Steel, I. J. ... 1902
 Stern, E. W. ... 1884
 Stevenson, W. H. ... 1901
 Stewart, J. A. ... 1898
 Stocking, F. T. ... 1895

S.—Continued.

Slater, F. W. ... 1904
 Smallpiece, F. C. ... 1898
 Smart, R. S. ... 1904
 Smiley, R. W. ... 1897

Stull, W. W. ... 1897
 Sutherland, W. H. ... 1902
 Symmes, H. D. ... 1891

T.

Taylor, T. ... 1902
 Taylor, W. V. ... 1893
 Taylor, A. ... 1900
 *Teasdale, C. M. ... 1902
 Tennant, D. C. ... 1899
 Tennant, W. C. ... 1900
 Thomson, T. K. ... 1886
 Thomson, R. W. ... 1892
 Thomson, S. E. ... 1904
 Thorne, S. M. ... 1900

Thorold, F. W. ... 1900
 Townsend, C. J. ... 1904
 Townsend, D. T. ... 1904
 Trees, S. L. ... 1903
 Tremaine, R.C.C. (dec'd) ... 1895
 Trimble, A. V. ... 1904
 Tucker, B. B. ... 1904
 Tyrrell, J. W. ... 1883
 Tyrrell, H. G. ... 1886

V.

VanEvery, W. W. ... 1899

Veroe, H. L. ... 1898

W.

Wade, E. ... 1904
 Waldron, J. ... 1903
 Walker, E. W. ... 1904
 Wanless, A. A. ... 1902
 Wass, S. B. ... 1903
 Watson, R. B. ... 1893
 Watson, J. P. ... 1904
 Watts, G. H. ... 1899
 Wagner, W. E. ... 1899
 Weekes, M. B. ... 1897
 Weir, H. M. ... 1900
 Weir, J. M. ... 1904
 Weldon, E. A. ... 1897
 Wells, A. F. ... 1904
 Whelihan, J. A. ... 1903

White, A. V. ... 1892
 White, H. F. ... 1903
 Wickett, T. ... 1889
 Wiggins, T. H. ... 1890
 Wilkinson, T. A. ... 1898
 Williamson, D. A. ... 1898
 Williams, C. G. ... 1903
 Willson, R. D. ... 1901
 Wilson, N. D. ... 1903
 Withrow, W. J. ... 1890
 Withrow, F. D. ... 1900
 Worthington, W. R. ... 1904
 Wright, C. H. C. ... 1888
 Wright, R. T. ... 1894
 Wright, W. F. ... 1904

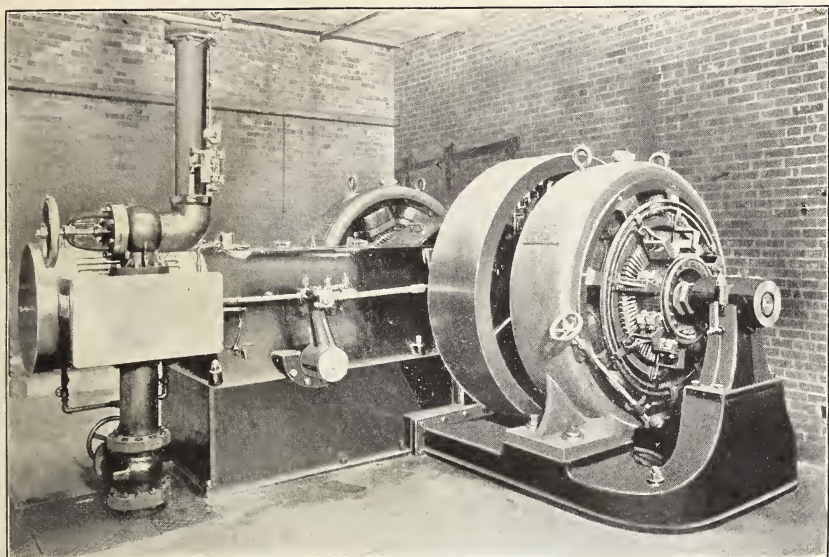
Y.

Yeates, E. ... 1899

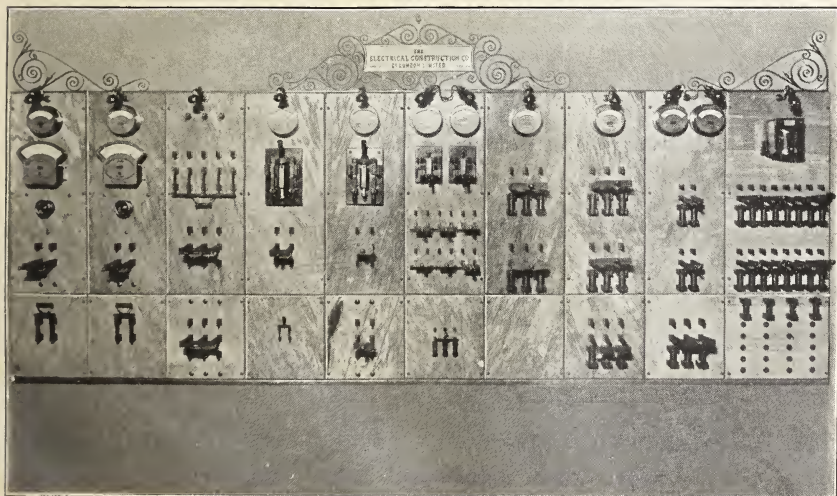
Young, C. R. ... 1903

Z.

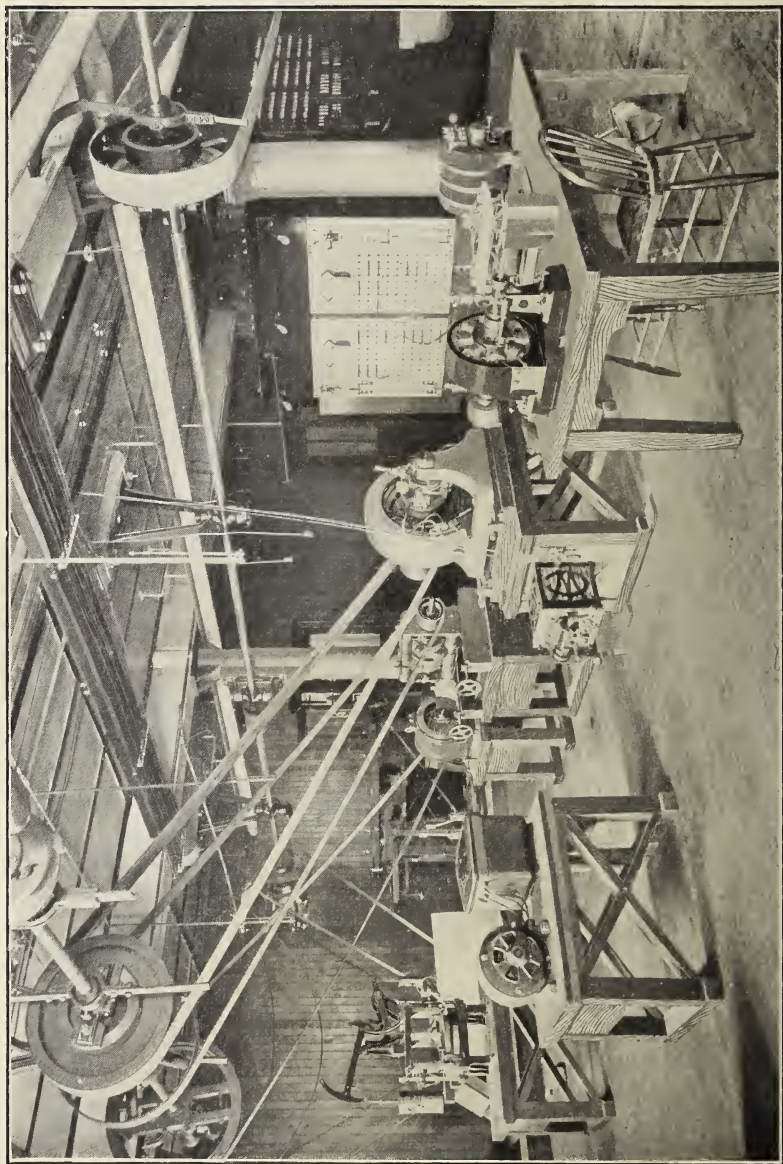
Zahn, H. J. ... 1902



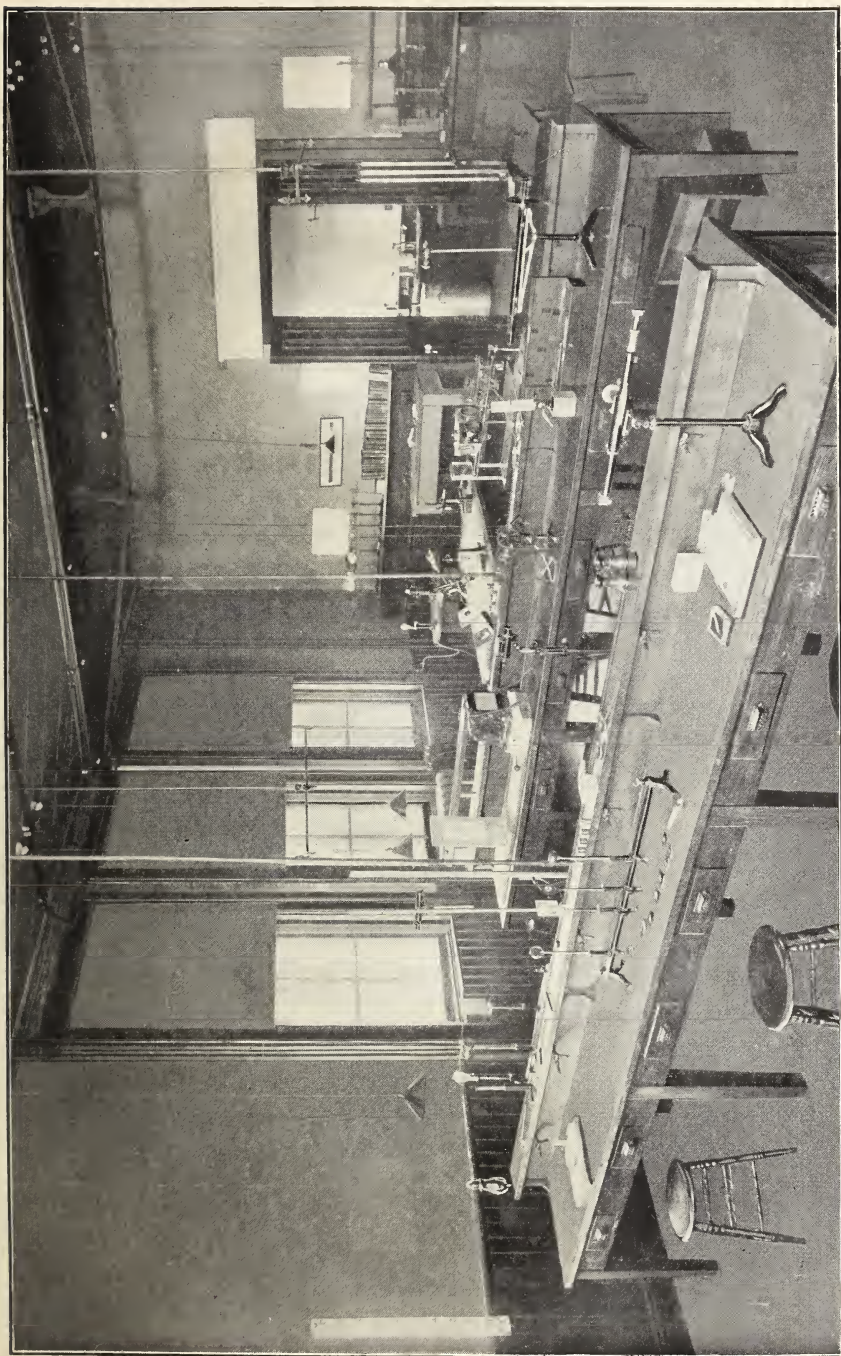
POWER ENGINE AND GENERATORS.



SWITCH BOARD.



PORTION OF DYNAMO LABORATORY.



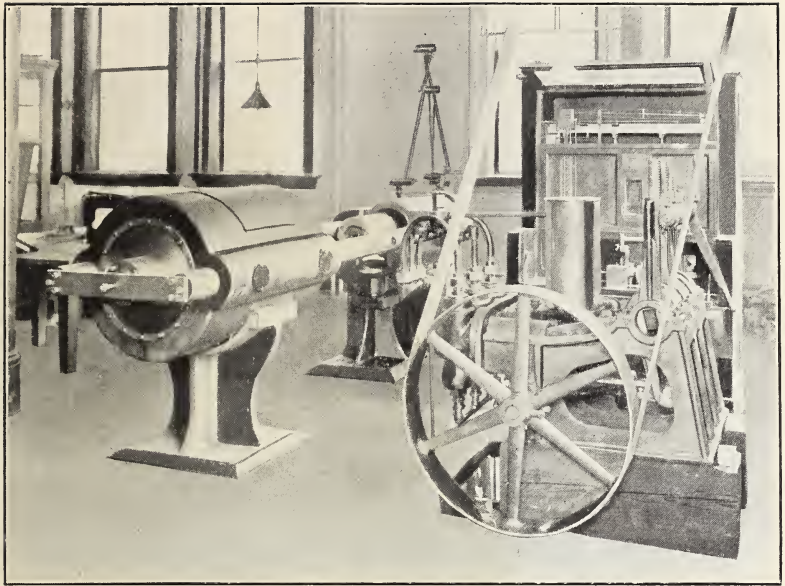
OPTICAL LABORATORY.



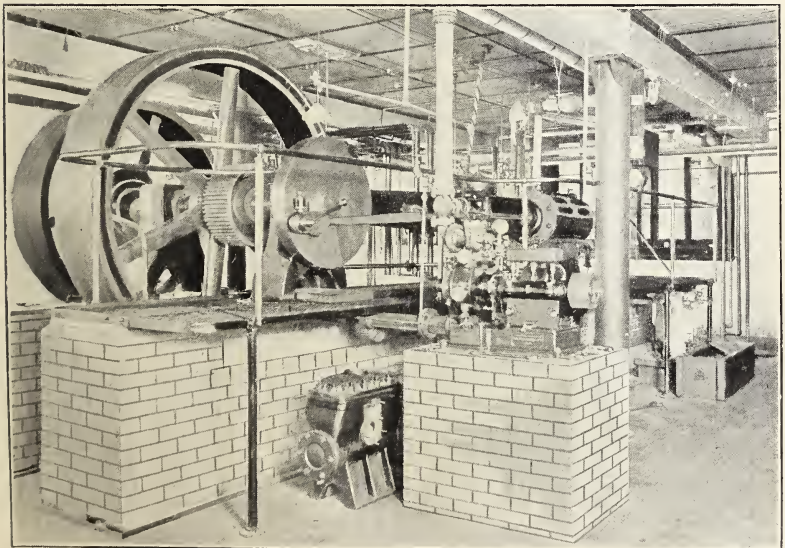
GALVANOMETER LABORATORY.



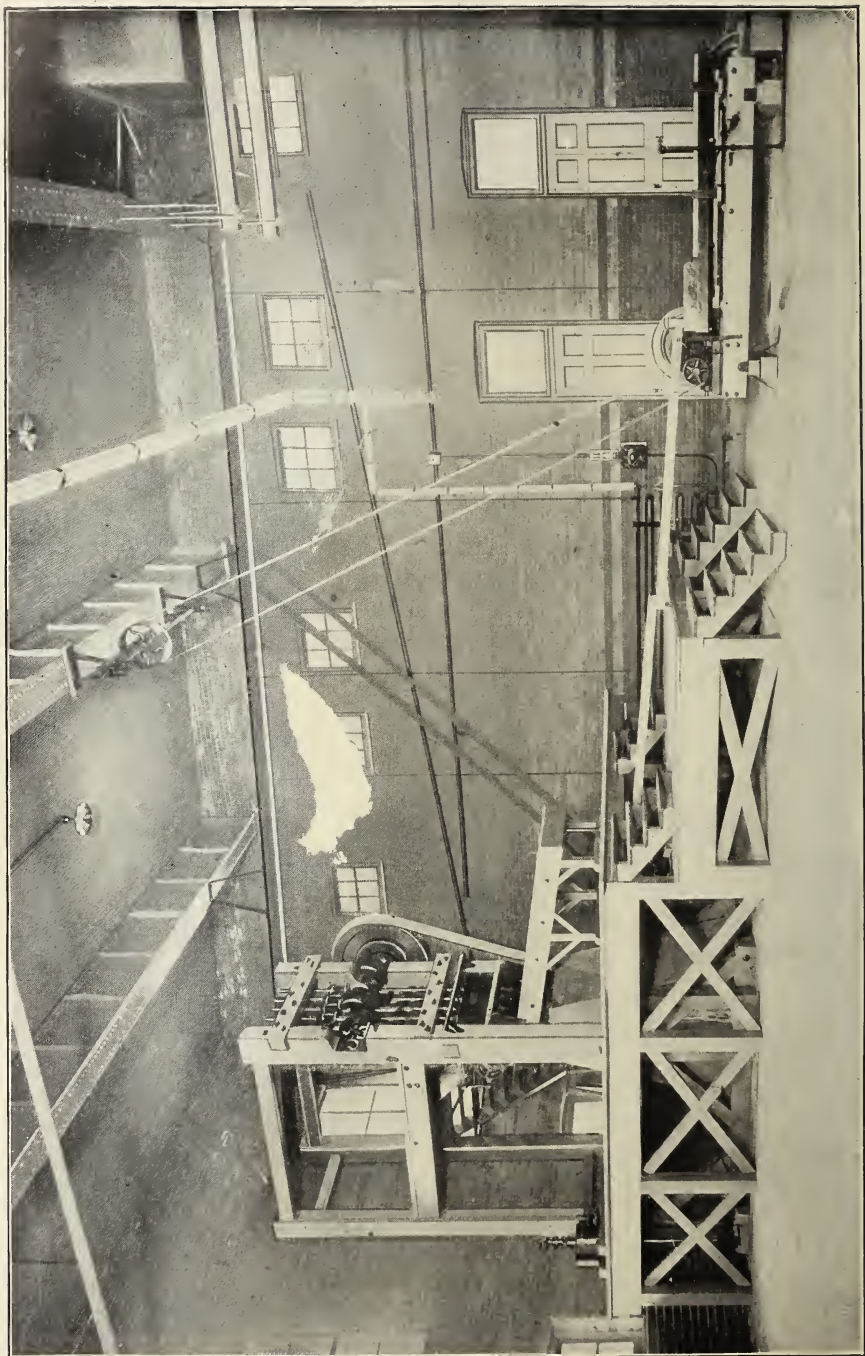
SENIOR ELECTRICAL LABORATORY.



EMERY TESTING MACHINE.



EXPERIMENTAL ENGINE AND STEAM TURBINE.



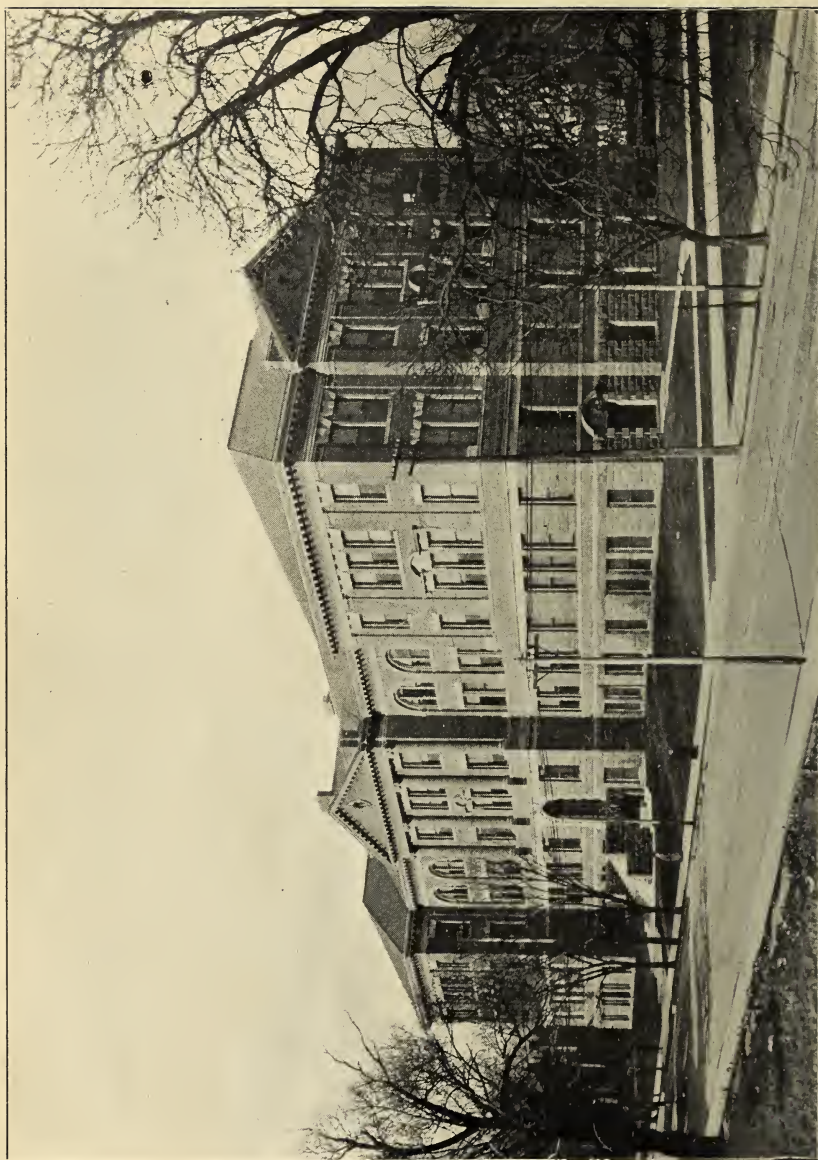
MILL ROOM.



METROLOGICAL LABORATORY.



FIRST YEAR DRAFTING ROOM.



CHEMISTRY AND MINING BUILDING.



ENGINEERING BUILDING.

CALENDAR

OF THE

Ontario

School of Practical Science

(Affiliated to the University of Toronto)

Faculty of Applied Science and Engineering of the
University of Toronto



Printed by order of the Legislative Assembly of the Province of Ontario

Twenty-Ninth Session, 1906-1907
TORONTO



WARWICK BRO'S & RUTTER, Limited
Printers and Bookbinders,
Toronto.

CONTENTS

	PAGE
CALENDAR	5
TIME TABLES	8
FACULTY	14
GENERAL DESCRIPTION	17
DEPARTMENTS	19
DIPLOMA	20
ADMISSION	21
FEES, DEPOSITS, ETC.	22
ESTIMATED EXPENSES OF A REGULAR COURSE	22
LODGING AND BOARD	23
FELLOWSHIPS	23
REGULATIONS	24
VACATION WORK	25
SUPPLEMENTAL EXAMINATIONS	26
EXEMPTIONS	26
PRIZES AND HONOURS	27
REGULAR EXAMINATIONS	28
DEPARTMENT OF CIVIL ENGINEERING	31
" MINING ENGINEERING	34
" MECHANICAL AND ELECTRICAL ENGINEERING	37
" ARCHITECTURE	41
" ANALYTICAL AND APPLIED CHEMISTRY	44
" CHEMICAL ENGINEERING	46
FOURTH OR POST-GRADUATE YEAR	50
DEGREE OF B.A.Sc.	52
PROFESSIONAL DEGREES	54
ACTS RESPECTING DOMINION AND ONTARIO LAND SURVEYORS.. .. .	57
ONTARIO ARCHITECTS' ACT	59
SYNOPSIS OF COURSES OF LECTURES	60
SUBJECTS AND TEXT BOOKS	62
THERMODYNAMIC LABORATORY	75
HYDRAULIC	76
STRENGTH OF MATERIALS LABORATORY	77
CEMENT TESTING LABORATORY	78
METROLOGICAL	78
ELECTRICAL	78

CONTENTS.—*Concluded.*

	PAGE
MINERALOGICAL LABORATORY	79
ASSAYING "	80
MILL ROOM "	80
PHYSICAL "	81
CHEMICAL "	82
MUSEUMS	83
LIBRARY	83
ENGINEERING SOCIETY	85
ATHLETIC CLUBS	85
2ND FIELD CO. OF ENGINEERS	87
GYMNASIUM.. .. .	89
STUDENTS IN ATTENDANCE	90
PRIZEMEN	104
GRADUATES IN APPLIED SCIENCE	106
" CIVIL ENGINEERING	109
" MINING ENGINEERING	109
" MECHANICAL ENGINEERING	109
" ELECTRICAL ENGINEERING	109
GRADUATES OF SCHOOL OF PRACTICAL SCIENCE	110
CERTIFICATES	139
INDEX TO GRADUATES	140

CALENDAR 1906-1907.

1906.	Sept.	24	Meeting of Council.
		25	Supplemental Examinations begin.
		28	Registration of Students.
	Oct.	1	First term begins.
			Lectures and Practical work begin.
			Last day for presentation of Vacation Work.
		10	Meeting of Engineering Society.
		12	Meeting of Council.
		24	Meeting of Engineering Society.
	Nov.	7	Meeting of Engineering Society.
		9	Meeting of Council.
		21	Meeting of Engineering Society.
	Dec.	5	Meeting of Engineering Society.
14		Meeting of Council.	
21		First term ends.	
1907.	Jan.	7	Second term begins.
		12	Meeting of Council.
		16	Meeting of Engineering Society.
		30	Meeting of Engineering Society.
	Feb.	9	Meeting of Council.
		13	Ash Wednesday—building closed.
		14	Meeting of Engineering Society.
		27	Meeting of Engineering Society.
	March	9	Meeting of Council.
		13	Meeting of Engineering Society.
		27	Meeting of Engineering Society.
		29	Good Friday—building closed.
		30	Annual Meeting of Engineering Society.
31		Last day for presentation of thesis for B.A.Sc.	
April	5	Meeting of Council.	
	6	Lectures and practical work close.	
	13	Annual Examinations begin.	
	15	Examinations for B.A.Sc. begin.	
May	6	Meeting of Board of Examiners.	
	10	Meeting of Council.	
June	7	University commencement.	

The buildings will be closed on all public holidays, and daily at noon during July and August.

[illegible]

OCTOBER

[illegible]

DECEMBER

SUN.	MON.	TUE.	WED.	THU.	FRI.	SAT.	SUN.	MON.	TUE.	WED.	THU.	FRI.	SAT.
..	..	..	..	1	2	3	..	..	..	..	..	..	1
4	5	6	7	8	9	10	2	3	4	5	6	7	8
11	12	13	14	15	16	17	9	10	11	12	13	14	15
18	19	20	21	22	23	24	16	17	18	19	20	21	22
25	26	27	28	29	30	..	23	24	25	26	27	28	29
..	..	..	..	..	..	..	30	..	..	..	..	..	..

1907.

FEBRUARY

[illegible]

TIME TABLE—FIRST YEAR.

SESSION 1906—1907.

	MONDAY.	TUESDAY.	WEDNESDAY.	THURSDAY.	FRIDAY.	
9-10	*Analytical Geometry, 1, 2, 3, 4, 5 German	*Trigonometry	*Algebra	*Analytical Geometry 1, 2, 3, 4, 6	*Trigonometry	9-10
10-11	Electricity Drawing 3, 5, 6 1, 2	Chemistry Statics Drawing 2, 5, 6 1, 4 3	Pen and Ink Chemistry “ Drawing E. F. (a) B. (b) 1, 2, 3, 5, 6 4	Statics Electricity Drawing 1, 4 3, 5, 6 2	Chemistry History of Architecture Drawing 2, 5, 6 4 1, 3	10-11
11-12	*Mineralogy 1, 2, 4, 5, 6 Statics	Statics Drawing 2, 6 1, 3, 4	Chemistry “ Drawing E. F. (a) B. (b)	Statics Surveying Drawing 3 1, 4 2, 6	Statics Dynamics Drawing 2, 6 3 1, 4, 5	11-12
12-1	Chemistry Surveying Dynamics 1, 4 3 2, 6	Chemistry Dynamics Descriptive Geometry try 3 1, 4 2, 6	Surveying Dynamics Descriptive Geometry try 2, 5, 6 3 1, 4	Chemistry Dynamics Descriptive Geometry try 1, 4 2, 6 3	Chemistry Dynamics Drawing 3 1, 4 2, 5, 6	12-1

2-3	Electricity C, D (c) *Mineralogy 1 (b) Drawing 2, 4, E, F " 1 (a) " C, D (c)	Chemistry A (b) " C, D (a) Field Work 1, 2, 4 (a) Drawing E, F " B (b)	Drawing 1, 2, 3, 4, 6	Field Work 1, 2, 4 (a) Drawing 3, 6 " 1, 2, 4 (b) " E, F (c) " 1, 2, 4 (b)	Electricity E, F (c) Field Work 1, 2, 4 (a) Drawing C, D " E, F (c) " 1, 2, 4 (b)	2-3
3-4	Electricity C, D (c) *Mineralogy 2 (b) Drawing 1, 4, E, F " 2 (a) " C, D (c)	Chemistry A (b) " C, D (a) Field Work 1, 2, 4 (a) Drawing E, F " B (b)	Drawing 1, 2, 3, 4, 6	Field Work 1, 2, 4 (a) Drawing 3, 6 " 1, 2, 4 (b) " E, F (c) " 1, 2, 4 (b)	Electricity E, F (c) Field Work 1, 2, 4 (a) Drawing C, D " E, F (c) " 1, 2, 4 (b)	3-4
4-5	Electricity C, D (c) *Mineralogy 4, 5, 6 (b) Drawing 1, 2, E, F " 4, 6 (a) " C, D (c)	Chemistry A (b) " C, D (a) Field Work 1, 2, 4 (a) Drawing E, F " B (b)	Drawing 1, 2, 3, 4, 6	Field Work 1, 2, 4 (a) Drawing 3, 6 " 1, 2, 4 (b) " E, F (c) " 1, 2, 4 (b)	Electricity E, F (c) Field Work 1, 2, 4 (a) Drawing C, D " E, F (c) " 1, 2, 4 (b)	4-5

1. Civil Engineering; 2. Mining Engineering; 3. Mechanical and Electrical Engineering; 4. Architecture; 5. Analytical and Applied Chemistry; 6. Chemical Engineering. *University of Toronto; (a) First term, (b) Second term, (c) Alternate weeks. Subjects, not otherwise specified, are common to all departments. In the department of Analytical and Applied Chemistry, all hours not allotted are to be spent in the Chemical Laboratories. For laboratory work, the students in the different departments will be divided into groups, as follows:—1, 2 and 4—A and B; 3, 5 and 6—C, D, E and F.

Saturday from 9-12 will be devoted to field work during the months of October and November, and to drawing during the remainder of the Session.

TIME TABLE—SECOND YEAR.

SESSION 1906—1907.

	MONDAY.	TUESDAY.	WEDNESDAY.	THURSDAY.	FRIDAY.	
9-10	Electricity 3, 5, 6 Dynamics 1, 2 Orders of Arch'e 4	Surveying 1, 2, 4 Dynamics 3, 6 Drawing 6	*Calculus 1, 2, 3, 4, 6	*Astronomy 1 *Lithology 2, 4 Electricity 3, 5, 6	*Calculus 1, 2, 3, 4, 6	9-10
10-11	Strength of Materials 3, 6 Drawing 1, 2, 4	Applied Chemistry 5, 6 Optics 3 (a) Hydrostatics 3 (b) Strength of Materials 1, 2, 4	Applied Chemistry 3, 5, 6 Optics 1, 4 (a) Hydrostatics 1, 4 (b) Drawing 2	Descriptive Geometry 3, 6 German 5 Strength of Materials 1, 2, 4	Optics 2, 5, 6 (a) Hydrostatics 2, 5, 6 (b) Drawing 1, 3, 4	10-11
11-12	*Physical Chemistry 5, 6 Drawing 1, 2, 3, 4	Spherical Trigonometry 1, 2 (a) Drawing 3, 4, 6 Drawing 1, 2 (b)	Strength of Materials 3, 6 History of Arch're 4 Drawing 1, 2	Geology 1, 2, 5 Metallurgy 3, 6 Drawing 4	*Physical Chemistry 5, 6 Descriptive Geometry 1, 2, 4 Spherical Trigonometry 3 (a) Drawing 3 (b)	11-12
12-1	Drawing 1, 2, 3, 4, 6	History of Ornament 4 Organic Chemistry 5, 6 Drawing 1, 2, 3	Applied Chemistry 1, 2, 4 Theory of Mechanism 3 German 5 Drawing 6	Metallurgy 1, 2, 4, 5 Drawing 3, 6	Theory of Mechanism 3 Organic Chemistry 5, 6 Drawing 1, 2, 4	12-1

2-5	Optics and Hydro- statics L, M, P, Q (c) Chemistry 1, 2, 4 Drawing J, K, N, O, R Drawing L, M, P, Q (c)	Optics and Hydro- statics C, D, I, R (c) Electricity J, K, L Field Work A, B, E, F, G, H (a) Field Work C, D, I (c a) Drawing M, N, O, P, Q R (c) “ “ A, B, E, F, G, H (b) Drawing C, D, I, (c b) *Mineralogy 5	Optics and Hydro- statics E, F (c) Electricity M, N, O Chemistry G, H Drawing A, B, C, D, I J, K, L, P, Q, R E, F (c)	Optics and Hydro- statics J, K, N, O (c) Electricity P, Q, R Field Work 1, 2, 4 (a) *Mineralogy 1, 2 (b) Drawing L, M “ J, K, N, O (c) “ 4 (b)	Optics and Hydro- statics A, B, G, H, (c) Chemistry 3, 6 Field Work C, D, E, F, I (a) Field Work A, B, G, H (c a) Drawing C, D, E, F, I (b) Drawing A, B, G, H (c b)

1. Civil Engineering ; 2. Mining Engineering ; 3. Mechanical and Electrical Engineering ; 4. Architecture ; 5. Analytical and Applied Chemistry ; 6. Chemical Engineering. *University of Toronto ; (a) First term ; (b) Second term ; (c) Alternate weeks. Subjects not otherwise specified are common to all departments. In the department of Analytical and Applied Chemistry all hours not allotted are to be spent in the chemical laboratories. For laboratory work the students in the different departments will be divided into groups, as follows :—1.—A, B, C, D, E & F ; 2.—G & H ; 4.—I ; 3, 5 and 6.—J, K, L, M, N, O, P, Q & R.

Saturday from 9-12 will be devoted to field work during the months of October and November, and to drawing during the remainder of the Session.

TIME TABLE—THIRD YEAR.

SESSION 1906-1907.

	MONDAY.	TUESDAY.	WEDNESDAY.	THURSDAY.	FRIDAY.	
9-10	Thermodynamics 1, 2 Hydraulics 3, 3 ¹ Descriptive Geometry 4 (a) Drawing 6	Thermodynamics 3, 3 ¹ , 6 Hydraulics 1, 2 Arch'l Design 4	Compound Stress 1 (a) Least Squares 1 (b) Mechanics of Machinery 3, 3 ¹ Sanitary Science 4 Chemistry 6 Drawing 2	Thermodynamics 1, 2 Hydraulics 3, 3 ¹ Principles of Decorations 4 German 5, 6	Thermodynamics 3, 3 ¹ , 6 Hydraulics 1, 2 Heating and Ventilation 4	9-10
10-11	Astronomy and Geodesy 1 Acoustics 4 Mechanics of Machinery 33 ¹ (a) Analytical Chemistry 2, 5, 6 Drawing 3, 3 ¹ (b)	Electrochemistry 3 ¹ , 5, 6 (a) Chemistry 2 (b) Drawing 1, 3, 4 " 2 (a) " 3 (b)	Descriptive Geometry 1, 2 (a) Heat Engines 3 (a) Electrochemistry 3 ¹ , 5, 6 (a) Chemistry 6 (b) Drawing 3 " 1, 2, 3 ¹	Applied Chemistry 3, 3 ¹ , 5, 6 Chemistry 2 (b) Drawing 1, 4 " 2 (a)	Astronomy and Geodesy 1 Applied Chemistry 5, 6 Mill Design 3 ¹ , 4 Assaying 2 (b) Drawing 3 " 2 (a)	10-11
11-12	Machine Design 3, 3 ¹ , 6 Ore Deposits 3, 2 History of Arch'e 4 Drawing 1, 3	Theory of Construction 1, 2, 3, 4, 6 (a) Do. do. 1 (b) *Organic Chemistry 5 Drawing 3, 4, 6 (b) Chemistry 2 (b)	Surveying 1, 2, 4 (a) *Organic Chemistry 5 Chemistry 6 Drawing 3, 3 ¹	Theory of Construc- tion 1, 2, 3, 4, 6 (a) " 1 (b) Drawing 3, 3 ¹ , 4, 6 (b) Chemistry 2 (b)	Machine Design 3, 3 ¹ , 6 Mining and Ore Dressing 2 Drawing 1, 4	11-12
12-1	Metallurgy 2, 5, 6 Electricity 3, 3 ¹ (a) Alternating Current 3, 3 ¹ (b) Drawing 1, 4	Geology 1, 2, 5 Electricity 3, 3 ¹ , 6 (a) Electrical Design 3 ¹ (b) Drawing 4 " 3, 6 (b)	Electricity 1, 2, 4, 5 Chemistry 6 Drawing 3, 3 ¹	Applied Chemistry 1, 2, 4 Electricity 3, 3 ¹ (a) Alternating Cur- rent 3, 3 ¹ (b) Drawing 6	Geology 1, 2, 5 Electricity 3, 3 ¹ , 6 (a) Electrical Design 3 ¹ (b) Chemistry 6 (b) Drawing 4	12-1

Electricity N, O, P, F, R, I, J, Electricity K, H. (c) *Mineralogy 2, 5 Heat—I, J, K, O, P, Chemistry V	Electricity J, K, G, P, Q, F. Electricity Q, R, L, M, N, O (cb) Electro Chemistry Q, R, I, M, N, O (ca) Field Work A, B, C, E, S (a) Field Work D (ca) Heat L, M, N, D. (c) Assaying 2 (b) Chemistry V	Electricity N, O, P, H, R, J, K (c) Electricity M, I (cb) Electricity L (b) Electro Chemistry L " M, I (ca) Chemistry 2 (c) Assaying 2 (c) Heat C — (c) Acoustics 4 (c)	Electricity, O, R, I, F, M, N, O, G (c) Electricity, J, K, P, P (cb) Electro Chemistry J, K, P, Q (ca) Field Work, C, D, E, S (a) " A, B (ca) Assaying 2 (b) Heat A, B (c) Chemistry V	Electricity L, M, G, I, Q, H (c) " N, O, P, R, 2-5 J, K (cb) Electro Chemistry N, O, P, R, J, K (ca) Field Work 1, 4 (a) " 2 (aa) Chemistry 2 (b) Heat 2, 3 (c) Chemistry V
Drawing G, 1, 4, Drawing F, H, M, N, Q, R. (c)	Drawing H, 1, 2, 4 (b) Drawing F, G, I, J, K, L (c) O, P, Q, R (c)	Drawing, A, B, D, F, G, Q—6 " C, H, I, J, K (c) S, M, N, O, P, R (c)	Drawing H. L — " 1, 2, 4—(b) " F, G, I, J, K, M (c) N, O, P, Q, R (c)	Drawing 1, 3, 4 (b) " 3 ¹ (c)

1. Civil Engineering; 2. Mining Engineering; 3 and 3¹. Mechanical and Electrical Engineering; 4. Architecture; 5. Analytical and Applied Chemistry; 6. Chemical Engineering. *University of Toronto. (a) First term; (b) Second term; (c) Alternate weeks. Subjects not otherwise specified are common to all departments. In the department of Analytical and Applied Chemistry all hours not allotted are to be spent in the Chemical Laboratories. For laboratory work the students in the different departments will be divided into groups as follows:—Department 1.—A, B, C and D; 2.—E; 3.—F, G and H; 3¹—I, J, K, L, M, N, O, P, Q and R; 4.—S; 5.—T and U and 6—V.

Saturday, from 9-12, will be devoted to field work during the months of October and November and to drawing during the remainder of the session.

FOURTH OR POST-GRADUATE YEAR.

There is no regular time table for the work of this year. The time of the students is spent almost wholly in the engineering, electrical, chemical and assaying laboratories. The hours are from 9 a.m. to 5 p.m. every working day during the session. Lectures are given at such hours as suit the laboratory work.

FACULTY OF THE SCHOOL.

Principal.....J. GALBRAITH, M.A., LL.D.
Registrar.....A. T. LAING, B.A. Sc.

MEMBERS OF TEACHING STAFF :

J. GALBRAITH, M.A., LL.D.....*Professor of Engineering (Chairman).*
W. HODGSON ELLIS, M.A., M.B...*Professor of Applied Chemistry.*
A. P. COLEMAN, M.A., Ph.D.....*Professor of Geology.*
L. B. STEWART, O.L.S., D.T.S....*Professor of Surveying and Geodesy.*
C. H. C. WRIGHT, B.A.Sc., Mem..O.A.A., *Professor of Architecture.*
T. R. ROSEBRUGH, M.A.....*Professor of Electrical Engineering.*
G. R. MICKLE, B.A.....*Professor of Mining.*
R. W. ANGUS, B.A. Sc.....*Lecturer in Mechanical Engineering.*
J. MCGOWAN, B.A., B.A.Sc.....*Lecturer in Applied Mechanics.*
J. W. BAIN, B.A.Sc.....*Lecturer in Applied Chemistry.*
G. R. ANDERSON, M.A.....*Lecturer in Physics.*
H. W. PRICE, B.A.Sc.....*Lecturer in Electrical Engineering.*
P. GILLESPIE, B.A.Sc.....*Lecturer in Theory of Construction.*
J. R. COCKBURN, B.A.Sc.....*Lecturer in Drawing.*
E. G. R. ARDAGH, B.A.Sc.....*Demonstrator in Chemistry.*
M. C. BOSWELL, M.A., B.A.Sc....*Demonstrator in Chemistry.*
J. G. McMILLAN, B.A.Sc.....*Demonstrator in Mining.*
H. G. SMITH, B.A.Sc.....*Demonstrator in Electrical Engineering.*
C. B. AYLSWORTH, Grad. S.P.S...*Fellow in Civil Engineering.*
S. E. MCGORMAN, Grad. S.P.S....*Fellow in Mechanical Engineering.*
W. W. GRAY, B.A.Sc.....*Fellow in Thermodynamics.*
E. W. WALKER, B.A.Sc.....*Fellow in Hydraulics.*
R. H. ARMOUR, Grad. S.P.S.....*Fellow in Electrical Engineering.*
R. B. ROSS, Grad. S.P.S.....*Fellow in Electrical Engineering.*
E. WADE, Grad. S.P.S.....*Fellow in Chemistry.*
S. DUSHMAN, B.A.....*Fellow in Chemistry.*
C. M. TEASDALE, B.A.Sc.....*Fellow in Surveying.*
S. R. CRERAR, B.A.Sc.....*Fellow in Surveying.*
W. E. DOUGLAS, B.A.....*Fellow in Surveying.*
D. T. TOWNSEND, B.A.Sc.....*Fellow in Drawing.*
W. M. BRISTOL, Grad. S.P.S....*Fellow in Drawing.*
J. D. SHEPLY, B.A.Sc.....*Fellow in Drawing.*
L. W. MORDEN, Grad. S.P.S....*Fellow in Physics.*
J. PARKE, B.A.Sc.....*Lecture Assistant in Chemistry.*

MEMBERS OF FACULTY OF ARTS:

whose classes are attended by the Regular Students of the School:

- R. RAMSAY WRIGHT, M.A., LL.D..*Professor of Biology.*
 ALFRED BAKER, M.A.....*Professor of Mathematics.*
 W. R. LANG, D. SC.....*Professor of Chemistry.*
 T. L. WALKER, M.A., Ph.D.....*Professor of Mineralogy and Petrography.*
 W. L. MILLER, B.A., Ph.D.....*Associate Professor of Physical Chemistry.*
 ALFRED T. DELURY, B.A.....*Associate Professor of Mathematics.*
 J. C. FIELDS, B.A., Ph.D.....*Associate Professor of Mathematics.*
 M. A. MCKENZIE, M.A.....*Associate Professor of Mathematics.*
 W. A. PARKS, B.A., Ph.D.....*Lecturer in Mineralogy.*
 F. B. KENRICK, M.A., Ph.D.....*Lecturer in Chemistry.*
 F. B. ALLAN, M.A., Ph.D.....*Lecturer in Chemistry.*
 J. G. PARKER, B.A.....*Fellow in Mathematics.*
 J. S. DELURY, B.A.....*Fellow in Mineralogy.*
-

SCHOOL OF PRACTICAL SCIENCE.

PROVINCE OF ONTARIO.

CALENDAR FOR THE SESSION 1906-1907.



THE Legislative Assembly during the Session of 1877 gave its sanction to the establishment of a School of Practical Science on the basis proposed in the memorandum of the Minister of Education confirmed by the Lieutenant-Governor in Council on the 3rd day of February, 1877.

By the scheme thus approved of, the Government effected an arrangement with the Council of University College whereby the students of the School of Practical Science enjoyed full advantage of the instruction given by its professors and lecturers in all the departments of science which were embraced in the work of the School.

This arrangement was brought to an end in 1889 by the transfer of the department of science above referred to, from University College to the University of Toronto under the operation of the University Federation Act.

In order that the students of the School might continue to enjoy the advantage of the instruction of the above departments, the Senate of the University of Toronto passed a Statute in October, 1889, affiliating the School to the University, which Statute was confirmed by the Lieutenant-Governor on the 30th day of October, 1889.

By an Order-in-Council, approved by the Lieutenant-Governor, on the 6th day of November, 1889, a Principal was appointed, and the management of the School was entrusted to a council composed of the Principal as chairman, and the Professors, Lecturers and Demonstrators appointed on the Teaching Faculty of the School.

By an Order-in-Council dated the 30th day of January, 1903, the Council of the School was made to consist of the Principal, the Professors and Lecturers, together with the Registrar.

The management and discipline of the School is vested in the Council.

By a Statute of the Senate of the University of Toronto, passed on December 14th, 1900, the teaching staff and examiners of the School of Practical Science, together with the examiners for the degree of B.A.Sc., and professional degrees in Engineering, were constituted ex-officio the Faculty of Applied Science and Engineering of the University of Toronto.

The statute is as follows :

By the Senate of the University of Toronto.

Be it enacted :

1. That the Faculty of Applied Science and Engineering be hereby established.

2. That the courses and examinations of the School of Practical Science leading to the diploma of the School and to the special certificates of the School, together with the courses and examinations leading to the degrees of Bachelor of Applied Science (B.A.Sc.), Civil Engineer (C.E.), Mining Engineer (M. E.), Mechanical Engineer (M.E.), and Electrical Engineer (E. E.), be the curriculum and examinations of the University in the said faculty.

3. That the members of the teaching staff of the School of Practical Science be the members of the teaching staff of the University in the said faculty.

4. That the examiners for the School of Practical Science, whether members of the teaching staff of the said School or otherwise, together with the examiners for the degrees named in clause 2, be the examiners of the University in the said faculty.

5. That the regular students of the School of Practical Science in the first, second, third and fourth years respectively be the undergraduates of the University in the corresponding years in the said faculty.

6. That the non-regular, occasional and special students of the School of Practical Science be the non-regular, occasional and special students of the University of the said faculty.

7. That the provisions of this statute apply, as far as may be, to all graduates of the School of Practical Science and to all graduates of the University in Applied Science and Engineering.

8. That no liability shall be incurred by the University of Toronto for the support or maintenance of the faculty hereby established.

BUILDINGS.

The work of the School is now carried on in two buildings, viz., the Engineering Building and the Chemistry and Mining Building.

The former building is devoted to strength and elasticity of materials, construction, machine design and mechanism, mechanics, hydraulics, thermodynamics, heat engines and boilers, pumps, electricity and electrical engineering, optics, acoustics, surveying, geodesy and astronomy, drawing, descriptive geometry, architecture, cements, masonry, etc.

The Chemistry and Mining Building affords accommodation for analytical and applied chemistry, electrochemistry, metallurgy, assaying, mining and milling, mineralogy and geology. The administration offices of the School are in this building.

DEPARTMENTS.

There are six regular Departments of Instruction, in each of which Diplomas are granted, viz. :—

1. Civil Engineering.
2. Mining Engineering.
3. Mechanical and Electrical Engineering.
4. Architecture.
5. Analytical and Applied Chemistry.
6. Chemical Engineering.

The instruction given in these departments is designed to give the student a thorough knowledge of the scientific principles underlying the practice in the several professions, and also such a training as may make him immediately useful when he commences actual professional work.

DIPLOMA.

The regular course in each department is three years' duration and leads to the Diploma of the School. The instruction is given partly in the lecture rooms and partly in the drafting rooms, laboratories and field. A certain amount of work is laid out for the summer vacation. The course of study in each department is general, and beyond the selection of his department the student has no opportunity to specialize.

DEGREE OF B. A. Sc.

After the general course is finished the Diploma of the School is granted and the student is at liberty either to enter the active life of his profession or to spend another year in special work. This year is called the fourth or post-graduate year. Graduates electing to proceed with their studies are allowed to select two subjects from an approved list, and are required to confine their whole attention to these subjects during the fourth year. The subjects in this list are such as require a large amount of time to be devoted to laboratory and other practical work. The advanced theoretical instruction is given either at the beginning or end of the working-day, in order not to break up the time allotted to practical work. During this year the student is required to prepare a thesis on some subject connected with his work. The practical examinations are held by the School, while the written examinations and the examination of the thesis are held by the University. After complying with all requirements, the candidate receives from the University the degree of Bachelor of Applied Science (B.A.Sc.).

PROFESSIONAL DEGREES.

Bachelors of Applied Science may, after three years spent in professional work, present themselves for the degrees of Civil Engineer (C.E.), Mining Engineer (M.E.), Mechanical Engineer (M.E.), or Electrical Engineer (E.E.), as the case may be, subject to the rules and regulations established by the University.

ADMISSION.

Candidates will be admitted as regular students in any of the regular departments of instruction on presenting satisfactory certificates of having passed either :

(a) The matriculation examination in Arts, in any University in His Majesty's Dominions, or in all the subjects of such matriculation examination except Latin and Greek, provided, however, that if an alternative be allowed by the University between either Latin or Greek and modern subjects (e.g., Modern Languages, Physics, Chemistry, etc.), the latter subjects must be taken if the former are omitted; or

(b) The Junior Leaving Examination of the Province of Ontario, including either French or German.

The case of the University of Toronto will serve as an illustration. The subjects for pass Junior Matriculation in Arts in the University of Toronto are: English Composition, English Literature, English Grammar, Algebra, Euclid, Arithmetic, History (British, Canadian and Ancient), Latin and any two of the following: Greek, French, German, Experimental Science (Physics and Chemistry). A candidate who desires to enter the School of Practical Science as a regular student, without taking Latin or Greek, will be required to present a certificate from the Registrar that he has passed in the following subjects:—English Composition, English Literature, English Grammar, Algebra, Euclid, Arithmetic, History (British, Canadian and Ancient), and any two of the following:—French, German and Experimental Science (Physics and Chemistry).

Applications for admission to the regular Departments based upon other certificates than those above mentioned will be considered by the Council. Such applications accompanied by the necessary certificates and information, must be in the hands of the Registrar of the School before September 20th.

Students intending to write at the High School Leaving Examination for the purpose of entering the School of Practical Science may do so without having previously passed the Primary Examination. Their papers must be endorsed "For admission to School of Practical Science."

SESSIONAL FEES AND DEPOSITS.

These are payable in two instalments, one in each term.

The first instalment must be paid before December 1st, the second before March 1st.

A discount of two dollars will be made on each instalment if paid before the end of the first calendar month of the term in which it is due.

FIRST YEAR.

First Term—			
Sessional Fees	\$35 00		
Library	1 00		
Deposit	5 00		
			<hr/>
			\$41 00
Second Term—			
Sessional Fees		35 00	
			<hr/>
			\$76 00

SECOND YEAR.

First Term—			
Sessional Fees	\$40 00		
Library	1 00		
Deposit	5 00		
			<hr/>
			\$46 00
Second Term—			
Sessional Fees		40 00	
			<hr/>
			\$86 00

THIRD YEAR.

First Term—			
Sessional Fees	\$45 00		
Library	1 00		
Deposit	5 00		
			<hr/>
			\$51 00
Second Term—			
Sessional Fees		45 00	
			<hr/>
			\$96 00

The total expense of a regular three years' course in any department is about \$360, which amount includes books, instruments and materials as well as the fees, etc., stated in above table.

Information as to the text books, instruments and materials to be purchased by the students will be given on registration at the beginning of the session.

Fourth or Post-Graduate Year.—The fees, etc., in this year are as follows :

First Term—			
Sessional Fees	\$35 00		
Library	1 00		
Deposit	5 00		
			\$41 00
Second Term—			
Sessional Fees	35 00		
*University Fees	20 00		
			55 00
Total			\$96 00

LODGING AND BOARD.

Accommodation is readily obtainable in numerous private boarding-houses within convenient distance of the School, at a cost of from three dollars and a half upwards for comfortable lodging with board; or rooms may be rented at a cost of from one dollar and a half per week upwards, and board obtained separately at moderate rates. A list of accredited boarding-houses is kept by the Secretary of the University College Young Men's Christian Association, and students are recommended to consult him with reference to the selection of suitable accommodation.

FELLOWSHIPS.

Fellowships have been established in the following: Civil Engineering, Mechanical Engineering, Electrical Engineering, Mining Engineering, Surveying, Drawing, Analytical and Applied Chemistry, Lecture Assistant in Chemistry.

Each fellowship is of the value of \$500 per annum.

The fellows are required to take such portions of the work of instruction as may be assigned to them by the Council.

Application for these fellowships are to be made annually to the Registrar on or before the 1st day of May.

*Payable to the Bursar of the University.

REGULATIONS RESPECTING EXAMINATIONS.

All students who are candidates for diplomas or certificates shall be in attendance at the school during the whole of each term, unless exempted by special permission of the Council. The term will not be allowed to any student who has attended less than three-fourths of the required lectures and practical work, or who has been reported to the Council for bad conduct and adjudged guilty thereof.

Candidates are required to send to the Registrar at least three weeks before the commencement of the Annual Examinations in April, and the Supplemental Examinations in September, notice in writing of their intention to take such examinations.

No candidate will be allowed to write at the Annual Examinations who has not paid all fees and dues for which he is liable.

The minimum percentage of marks required to pass in the written examinations will be fixed from time to time by the Council.

The minimum percentage of marks required to pass in the practical work connected with any subject shall be one and one-half times the minimum required in the case of a written examination.

In order to pass in subjects wherein both written and practical examinations are held, the candidate must pass in both examinations.

In order to pass the practical examinations in the subjects of applied mechanics, descriptive geometry, surveying and architecture, the drawings set in the lectures on these subjects must be made.

Drawings prescribed for the first term of the session will not be counted unless finished in that term.

To pass in drawing, the drawings already referred to must be made, together with as many others as may be prescribed.

The number of practice sheets to be made by each student will depend upon his progress.

The minimum number of drawings shall be twenty-five, and the maximum number thirty-five, except in the Department of Analytical and Applied Chemistry, in which the numbers shall be fifteen and twenty-five respectively.

The minimum percentage of marks prescribed for practical work must be obtained in drawing.

The drawings must be made on paper 15 in. x 22 in., unless otherwise prescribed.

The Council reserves the right of disposing of the drawings as they may think proper. No drawings may be removed from the school without permission.

No drawings will be counted which have not been made in the drafting rooms, and during the hours allotted to such work.

To pass in Surveying the minimum percentage required for practical work must be obtained in the field work.

No field notes will be counted which have not been taken in the field, and during the hours allotted to such work.

Students taking practical astronomy are required to take observations in the field for time, latitude, and azimuth.

In order to pass in any branch of practical work at least 50 per cent. of the marks allotted to that work must be obtained in each term.

VACATION WORK.

Vacation work must be handed in, on or before the first day of the session.

Vacation notes must be on construction only, and contain not less than twenty, nor more than thirty pages of sketches. These sketches must be free-hand pencil drawings with figured dimensions.

No notes, whether taken during the session or the vacation, will be counted unless made in the standard note books of the School.

The minimum percentage of marks required for practical work must be made in the case of vacation notes.

SUPPLEMENTAL EXAMINATIONS, Etc.

A candidate who fails in one or two subjects at the annual examinations, will be required to take supplemental examinations in such subjects.

The supplemental written examinations will begin on the 25th of September, 1906.

No candidate will be allowed to enter the fourth year who has not passed his supplemental examinations.

In the case where a candidate fails to pass a supplemental examination it will count as one of the two supplemental examinations which may be allowed him after the next annual examination.

Candidates who fail in being promoted to a higher year or in graduating will be required to take again the whole course of instruction, both theoretical and practical, of the year in which they fail before presenting themselves a second time for examination.

The fees to be paid by a student repeating a year will be the regular fees for such year.

Students are required to spend the hours of every working day between 9 a.m and 5 p.m. at the work laid down in the time-table.

EXEMPTIONS.

Applications for exemption from any of the regulations of the School must be made to the Council in writing and the particulars of the case fully stated.

PRIZES.

Through the liberality of Messrs. T. Kennard Thomson, C. E., of New York, the Hon. W. H. Montague, M.D., W. K. George and Noel Marshall of Toronto, the following prizes in books are open for competition for general proficiency in the Third Year, subject to the conditions of the Council:—

T. Kennard Thomson	Civil Engineering	1st	Prize	\$10
Hon. W. H. Montague	Mining Engineering	1st	"	10
"	" " " "	2nd	"	5
"	Architecture	1st	"	10
Standard Silver Co., (W. K. George).				
"	... Mechanical Engineering ..	1st	"	10
"	... Mech. & Elec. " ..	2nd	"	5
"	... Applied Chemistry	1st	"	10
Noel Marshall	Electrical Engineering ..	1st	"	10
"	..... Chemical Engineering	1st	"	10
"	..... Civil Engineering	2nd	"	5

HONOURS.

Honours will be granted in each department to the students who pass in all the subjects and obtain at least 66 per cent. of the total number of marks allotted to the department at the annual examinations.

Papers read before the Engineering Society may be considered in granting Honours.

The Honour list will be arranged alphabetically.

REGULAR EXAMINATIONS.

(APPROXIMATE LIST.)

I. Year.

EXAMINATIONS HELD AT THE END OF THE SESSION.

Algebra.	Mineralogy .....1,2,4,5,6.
Plane Trigonometry.	History of Architecture ...4.
Analytical Geometry.1,2,3,4,6.	Electricity .....3,5,6.
Descriptive Geometry	Magnetism and Electric-
.....1,2,3,4,6.	ity .....3,5,6.
Surveying .....1,2,3,4,6.	Statics .....1,2,3,4,6.
Chemistry, Elementary.	Dynamics .....1,2,3,4,6.
Chemistry, Inorganic ....5,6.	

EXAMINATIONS HELD DURING THE SESSION.

Drawing.

Field Notes	1,2,4.
Architectural Sketches	4.
Practical Electricity	3,5,6.
Practical Chemistry.	
Practical Mineralogy	1,2,4,5,6.
German	5.

II. Year.

EXAMINATIONS HELD AT THE END OF THE SESSION.

Calculus .....1,2,3,4,6.	Metallurgy.
Astronomy .....1.	Chemistry, Inorganic ....5,6.
Optics.	Chemistry, Organic.....5,6.
Strength of Mater-	Chemistry, Physical .....5,6.
ials .....1,2,3,4,6.	Chemistry, Applied.
Dynamics .....1,2,3.	do do .....5,6.
Theory of Mechanism .....3.	Electricity .....3,5,6.
Hydrostatics.	Descriptive Geometry
History of Architecture ....4.	.....1,2,3,4,6.
Orders of Architecture .....4.	Surveying .....1,2,4.
History of Ornament .....4.	Spherical Trigonometry.1,2,3.
Lithology .....2,4.	Geology .....1,2,5.

-
- | | |
|--------------------------------------|---|
| 1. Civil Engineering. | 3. Mechanical and Electrical Engineering. |
| 2. Mining Engineering. | 4. Architecture. |
| 5. Analytical and Applied Chemistry. | 6. Chemical Engineering. |

EXAMINATIONS HELD DURING THE SESSION.

Drawing	1,2,3,4,6.
Field Notes	1,2.
Construction Notes	1,2,3,4,6.
Architectural Sketches	4.
Experimental Physics.	
Practical Electricity	3,5,6.
Practical Chemistry (qualitative) ...	1,2,3,4,6.
Practical Chemistry (quantitative)	2,5,6.
Practical Mineralogy	1,2,5.
Practical Lithology	2.
German	5.

III. Year.

EXAMINATIONS HELD AT THE END OF THE SESSION.

Magnetism and Electric- ity	3,3',6.	Theory of Construc- tion	1,2,3,4,6.
Electricity	1,2,4,5.	Mechanics of Machin- ery	3,3'.
Alternating Current	3,3'.	Machine Design	3,3',6.
Electrical Design	3'.	Hydraulics	1,2,3,3'.
History of Architecture ...	4.	Thermodynamics ...	1,2,3,3',6.
History of Ornament	4.	Heat Engines	3.
Principles of Decoration ...	4.	Descriptive Geometry ...	1,2,4.
Elements of Design	4.	Electrochemistry	3',5,6.
Method of Least Squares...1.		Practical Astronomy and Geodesy	1.
Chemistry, Organic	5.	Surveying and Levelling, 1,2,4.	
Chemistry, Applied.		Metallurgy	2,5,6.
Analytical Chemistry ...	2,5,6.	Mining and Ore Dressing...2.	
Sanitary Plumbing, Heating and Ventilation	4.	Ore Deposits	2.
Theory of Compound Stress	1.	Mill Design .	3,4.
Economic Geology	1,2,5.	Biology	5.
		Acoustics	4.

- | | |
|--------------------------------------|---|
| 1. Civil Engineering. | 3. Mechanical and Electrical Engineering. |
| 2. Mining Engineering. | 4. Architecture. |
| 5. Analytical and Applied Chemistry. | 6. Chemical Engineering. |

EXAMINATIONS HELD DURING THE SESSION.

Drawing	1,2,3,3',4,6.
Field Notes	1,2.
Construction Notes	1,2,3,3',4,6.
Architectural Sketches	4.
Experimental Heat	1,2,3,3'.
Experimental Acoustics	4.
Practical Electricity	3,3',5.
Practical Electrochemistry	3',5,6.
Practical Chemistry	2,5,6.
Practical Biology	5.
Determinative Mineralogy	2,5.
Assaying	2,5.
German	5,6.

-
- | | |
|-------------------------------------|---|
| 1. Civil Engineering. | 3. Mechanical and Electrical Engineering. |
| 2. Mining Engineering. | 4. Architecture. |
| 5. Analytical and Applied Chemistry | 6. Chemical Engineering. |
-

DEPARTMENTS.

CIVIL ENGINEERING.

I. Year.

MATHEMATICS.

Algebra, plane trigonometry.
Analytical plane geometry.

DRAWING.

Copying from the flat, lettering, topography.
Graphics.
Descriptive geometry in its application to plane-sided solids, orthographic (including isometric) and oblique projection.
Original surveys.

CHEMISTRY.

General principles of chemistry.
The elements and their compounds.
Laboratory work.

MINERALOGY.

Introductory course.
Laboratory work.

MECHANICS.

Statics and dynamics (with special reference to structures and machines).

SURVEYING.

Field and office work, chain and compass surveys, topography, preliminary instructions in the use of the transit-theodolite, plotting, mensuration.

II. Year.

MATHEMATICS.

Differential and integral calculus.
Spherical trigonometry.
Plane astronomy.

DRAWING.

Subjects of first year continued.

Coloring and shading applied to both topographical and construction drawing.

Descriptive geometry in its application to solids bounded by curved surfaces. Shades and shadows, perspective.

Machines and structures. (Drawings made from both copies and original notes.)

CHEMISTRY.

Heat and its applications.

The materials of construction.

Laboratory work.

MECHANICS.

Statics and dynamics (pure and applied).

Strength and elasticity of materials.

Experimental work in engineering laboratory.

SURVEYING.

Transit-theodolite surveying.

Levelling.

Railway location curves, etc.

Topographic, hydrographic and mining surveying.

MINERALOGY.

Blowpipe practice.

Determination of minerals.

GEOLOGY.

Elements.

METALLURGY.

Iron and steel.

OPTICS.

HYDROSTATICS.

Laboratory work.

VACATION WORK.

Construction Notes

III. Year.

DRAWING.

Subjects of previous years continued.

Descriptive geometry—the various projections of the sphere and principles of map construction, stone cutting.

Original designs—bridges, roofs, floors, arches, etc.

CHEMISTRY.

Water and air.

Photography.

Explosives.

MECHANICS.

Statics and dynamics (pure and applied).

Strength and elasticity of materials.

Theory of construction.

Practical designs—bridges, roofs, floors, arches, retaining walls, foundations, etc.

Thermodynamics and theory of the steam engine.

Hydraulics, sewerage, water supply.

Laboratory work in heat.

SURVEYING.

Levelling.

Profiles, cross sections, field work and plotting.

Computation of quantities.

Mathematical theory of surveying instruments.

Trigonometrical and barometrical levelling.

Geodesy.

Practical astronomy (treated in the manner required for the O.L.S. and D.L.S. examinations).

Least squares.

ELECTRICITY.

Dynamos and motors.
Arc and incandescent lamps.
Power transmission.

GEOLOGY.

Economic geology.

VACATION WORK.

Construction Notes.

MINING ENGINEERING.

I. Year.

MATHEMATICS.

Algebra, plane trigonometry.
Analytical plane geometry.

DRAWING.

Copying from the flat,, lettering, topography.
Graphics.
Descriptive geometry in its application to plane-sided solids, orthographic (including isometric) and oblique projection.

CHEMISTRY.

General principles of chemistry.
The elements and their compounds.
Laboratory work.

MINERALOGY.

Introductory course.
Laboratory work.

MECHANICS.

Statics and dynamics (with special reference to structures and machines).

SURVEYING.

Field and office work, chain and compass surveys, topography, preliminary instruction in the use of the transit-theodolite, plotting, mensuration.

II. Year.

MATHEMATICS.

Differential and integral calculus.
Spherical trigonometry.

DRAWING.

Subjects of the first year continued.
Coloring and shading applied to both topographical and construction drawing.
Descriptive geometry in its application to solids bounded by curved surfaces. Shades and shadows and perspective.
Machines and structures from both copies and original notes.

CHEMISTRY.

Heat and its application.
The materials of construction.
Laboratory work.

MECHANICS.

Statics and dynamics (pure and applied).
Strength and elasticity of materials.

SURVEYING.

Transit-theodolite surveying.
Levelling.
Railway location, curves, etc.
Topographic, hydrographic and mining surveying.

GEOLOGY.

Elements.

MINERALOGY.

Blowpipe practice.
Determination of minerals.
Lithology.

METALLURGY.

Iron and steel.

OPTICS.

HYDROSTATICS.

Laboratory work.

VACATION WORK.

Construction Notes.

III. Year.

DRAWING.

Subject of previous years continued.
Descriptive geometry.
Various projections of the sphere, and principles of map construction.
Stone cutting.
Original designs—bridges, roofs, floors, etc.

CHEMISTRY.

Water and air.
Photography.
Explosives.
Analytical chemistry.
Laboratory work.

MECHANICS.

Statics and dynamics (pure and applied).
Strength and elasticity of materials.
Theory of construction.
Thermodynamics and theory of steam engine.
Hydraulics.
Experimental work in engineering laboratory.

SURVEYING.

Levelling.

Profiles, cross-sections, field work and plotting.

Computation of quantities.

Mathematical theory of surveying instruments.

Trigonometrical and barometrical levelling.

ELECTRICITY.

Dynamos and motors.

Arc and incandescent lamps.

Power transmission.

MINERALOGY AND GEOLOGY.

Economic geology.

Palaeontology.

Ore deposits.

Determinative mineralogy.

METALLURGY.

Metallurgy of gold, silver, nickel, copper, etc.

Mining and ore dressing.

Assaying.

VACATION WORK.

Construction Notes.

MECHANICAL AND ELECTRICAL ENGINEERING.

I. Year.

MATHEMATICS.

Algebra, plane trigonometry.

Analytical plane geometry.

DRAWING.

Copying from the flat, lettering, graphics.

Descriptive geometry in its application to plane-sided solids, orthographic (including isometric), and oblique projection.

CHEMISTRY.

General principles of chemistry.
The elements and their compounds.
Laboratory work.

MECHANICS.

Statics and dynamics (with special reference to structures and machines).

SURVEYING.

Application of trigonometry and principles of measurement (lectures only).

ELECTRICITY.

Magnetism, electrostatics.
Electromagnetism, current electricity.
Wiring and distribution.
Introductory laboratory course.

II. Year.

MATHEMATICS.

Differential and integral calculus.
Spherical trigonometry.

DRAWING.

Subjects of first year continued.
Coloring and shading applied in constructive drawing.
Descriptive geometry in its application to solids bounded by curved surfaces, shades, shadows and perspective.
Machines and structures (drawings made from both copies and original notes).

CHEMISTRY.

Heat and its application.
The materials of construction.
Laboratory work.

MECHANICS.

Statics and dynamics (pure and applied).

Theory of mechanism.

Strength and elasticity of materials.

Materials of construction.

Methods and processes.

METALLURGY.

Iron and steel.

OPTICS.

HYDROSTATICS.

Laboratory work.

ELECTRICITY.

Electrical measurements, lectures and laboratory work.

VACATION WORK.

Construction Notes.

III. Year.

In this year an option is allowed between Theory of Heat Engines and Mill Building Design on the one hand, and Alternating Current, Electrical Design and Electrochemistry on the other. The former is denoted in the time table and elsewhere by 3 and the latter by 3'.

DRAWING.

Subjects of previous year continued.

Original designs.

CHEMISTRY.

Water and air.

Photography.

Explosives.

ELECTROCHEMISTRY.

Lectures and laboratory work.

MECHANICS.

Subjects of previous year continued.

Applied mechanics.

Mechanics of machinery, machine design, thermodynamics and theory of steam engine, theory of heat engines, hydraulics.

Application of principles to practical problems connected with the design, construction and testing of various prime motors and machines.

Experimental work in engineering laboratory.

Mill building design.

ELECTRICITY.

Lectures and practical work on electromagnetism, applied electromagnetism.

Direct and alternating current.

Dynamo-electric machinery.

Armature windings.

Electrical design.

ORIGINAL DESIGNS.

Engine and machine design.

VACATION WORK.

Construction Notes.

In addition to taking the course of instruction in the School and passing the requisite examinations, a candidate for the diploma in Mechanical and Electrical Engineering will be required to present satisfactory evidence of having had at least one year's good practical experience in one of the principal trades connected with mechanical work, such as machinist, pattern-maker, moulder, steam engineer, etc. There is no restriction as to the place where the candidate may have gained such practical experience.

ARCHITECTURE.

I. Year.

MATHEMATICS.

Euclid, algebra, plane trigonometry.
Analytical plane geometry.

DRAWING.

Copying from the flat, lettering, topography, graphics.
Descriptive geometry in its application to plane-sided
solids, orthographic (including isometric) and oblique
projection.
Rendering in pencil and pen and ink.

CHEMISTRY.

General principles of chemistry.
The elements and their compounds.
Laboratory work.

MECHANICS.

Statics (with reference to structures).
Dynamics (preliminary to the study of hydraulics).

SURVEYING.

Principles, chain surveying, mensuration.

MINERALOGY.

Introductory course.
Laboratory work.

HISTORY OF ARCHITECTURE.

General introduction.
Ancient architecture.
Egyptian, Assyrian and Persian.

II. Year.

MATHEMATICS.

Differential and integral calculus.

DRAWING.

Instrumental drawing, drawing from the cast, sketching
and water color, pen and ink.

Descriptive geometry (curved surfaces).

Shades and shadows and perspective.

CHEMISTRY.

Heat and its application.

The materials of construction.

Laboratory work.

MECHANICS.

Statics (pure and applied).

Strength and elasticity of materials.

Materials of construction.

SURVEYING.

Use of transit and level.

Mensuration.

LITHOLOGY.

Elementary course.

METALLURGY.

Iron and steel.

OPTICS.

HYDROSTATICS.

Laboratory work.

HISTORY OF ARCHITECTURE.

Greek and Roman.

Romanesque and Byzantine.

ORDERS AND ELEMENTS OF ARCHITECTURE.

Principles of planning.

HISTORY OF ORNAMENT.

Ancient.

Classic—Greek, Roman.

VACATION WORK.

Construction Notes.

III. Year.

DRAWING.

Descriptive geometry.

Advanced perspective, stone cutting.

Water color sketching.

Original designs—floors, trusses, arches, etc.

CHEMISTRY.

Water and air.

Photography.

Explosives.

THEORY OF CONSTRUCTION.

Electricity.

Hydraulics.

Mill building design.

Experimental work in engineering laboratory.

SANITARY SCIENCE.

House drainage and plumbing.

Ventilation and heating.

SURVEYING.

Levelling, setting out excavation, mensuration.

ELECTRICITY.

Dynamos and motors.

Arc and incandescent lamps.

Power transmission.

ACOUSTICS.

Laboratory work.

HISTORY OF ARCHITECTURE.

Gothic and Renaissance, with special reference to England.

ELEMENTS OF DESIGN.

Principles of planning with special reference to residences.

Relation between plan and elevations.

HISTORY OF ORNAMENT.

Early Christian : Gothic and Renaissance.

PRINCIPLES OF DECORATION.

VACATION WORK.

Construction Notes.

ANALYTICAL AND APPLIED CHEMISTRY.

I. Year.

MATHEMATICS.

Algebra, plane trigonometry.

DRAWING.

Copying from the flat, lettering.

Model drawing.

CHEMISTRY.

General principles of chemistry.

The elements and their compounds.

Laboratory work.

MINERALOGY.

Introductory course.

Laboratory work.

ELECTRICITY.

Magnetism, electrostatics.

Electromagnetism, current electricity.

Wiring and distribution.

Introductory laboratory course.

II. Year.

CHEMISTRY.

Heat and its application.

The materials of construction.

Chemical manufactures.

Organic chemistry.

Elementary physical chemistry.

Laboratory work in quantitative and qualitative analysis.

MINERALOGY.

Blowpipe practice.

Determination of minerals.

GEOLOGY.

Physical geography, palaeontology and geology.

METALLURGY.

Iron and steel.

OPTICS.

HYDROSTATICS.

Laboratory work.

ELECTRICITY.

Electrical measurements, lectures and laboratory work.

GERMAN.

III. Year.

CHEMISTRY.

Water and air.
Photography.
Explosives.
Chemical manufactures.
Organic chemistry.
Electrochemistry.
Analytical chemistry.
Laboratory work.

ELECTRICITY.

Dynamos and motors.
Arc and incandescent lamps.
Power transmission.

GEOLOGY.

Economic geology.

MINERALOGY.

Determinative mineralogy.

METALLURGY.

Gold, silver, nickel, copper, lead.
Assaying.

BIOLOGY.

GERMAN.

CHEMICAL ENGINEERING.

I. Year.

MATHEMATICS.

Algebra, plane trigonometry.
Analytical plane geometry.

DRAWING.

Copying from the flat, lettering, graphics.
Descriptive geometry in its application to plane-sided solids, orthographic (including isometric), and oblique projection.

SURVEYING.

Application of trigonometry and principles of measurement (lectures only).

MECHANICS.

Statics and dynamics (with special reference to structures and machines).

CHEMISTRY.

General principles of chemistry.

The elements and their compounds.

Laboratory work.

MINERALOGY.

Introductory course.

Laboratory work.

ELECTRICITY.

Magnetism, electrostatics.

Electromagnetism, current electricity.

Wiring and distribution.

Introductory laboratory course.

II. Year.

MATHEMATICS.

Differential and integral calculus.

DRAWING.

Subjects of first year continued.

Coloring and shading applied in construction drawing.

Descriptive geometry in its application to solids bounded by curved surfaces; shades and shadows, and perspective.

Machines and structures. (Drawings made from both copies and original notes.)

CHEMISTRY.

Heat and its application.
The materials of construction.
Chemical manufactures.
Organic chemistry.
Elementary physical chemistry.
Laboratory work.

MECHANICS.

Strength and elasticity of materials.
Materials of construction.
Methods and processes.

METALLURGY.

Iron and steel.

OPTICS.

HYDROSTATICS.

Laboratory work.

ELECTRICITY.

Electrical measurements, lectures and laboratory work.

VACATION WORK.

Construction Notes.

III. Year.

DRAWING.

Subjects of previous year continued.

CHEMISTRY.

Thermochemistry, fuels and combustion.
Destructive distillation.
Coal tar products.
Explosives.
Electrochemistry.
Laboratory work.

METALLURGY.

Gold, silver, nickel, copper, lead.

MECHANICS.

Subjects of previous year continued.

Applied mechanics.

Machine design, thermodynamics and theory of steam engine.

Application of principles to practical problems connected with the design, construction and testing of various prime motors and machines.

Experimental work in engineering laboratory.

ELECTRICITY.

Lectures and laboratory work on electromagnetism, applied electromagnetism.

Direct and alternating current.

Dynamo-electric machinery.

ORIGINAL DESIGNS.

Engine and machine design.

GERMAN.

VACATION WORK.

Construction Notes.

VACATION WORK.

The engineering and architectural students are required to make, during the vacation, full and clear notes of various constructions that may fall under their notice.

The value of the construction notes is taken into account in determining standing at the next annual examination.

THE FOURTH OR POST GRADUATE YEAR.

After the completion of the general three years' course in any department, students are recommended to take up the special work of the Fourth Year, leading to the degree of Bachelor of Applied Science in the University of Toronto. It is only by so doing that full advantage can be taken of the laboratory equipment of the School. The Fourth Year enables students to continue under certain restrictions the study of subjects in which they take special interest and is the means adopted in the School of Practical Science of affording them the advantage of elective and special studies.

To be admitted to the Fourth Year a candidate must be a graduate of the School of Practical Science or an under-graduate of the standing of the Fourth Year in the University of Toronto in the Honour Department of Chemistry and Mineralogy.

The subjects of study in the Fourth Year are arranged in the following groups and sub-divisions.

- A. { Astronomy.
Geodesy and Metrology.
- B. { Architecture.
Strength and Elasticity of Materials.
Hydraulics.
Thermodynamics and Theory of Heat Engines.
Electricity and Magnetism.
Electrochemistry.
- C. { Industrial Chemistry.
Sanitary and Forensic Chemistry.
Electrochemistry.
Inorganic and Organic Chemistry.
- D. { Mineralogy and Geology.
Metallurgy and Assaying.

Each student will be required to confine his studies during the session to two subdivisions of one of the above groups.

The subdivision "Inorganic and Organic Chemistry" will be obligatory on all students who select group C.

A student is liable to be called on to assist in any of the experimental and practical work in the group which he has selected, although it may not belong to his special subjects.

Candidates are required to notify the Registrar of the School in writing of their intention to take the Fourth Year work at least one week before the opening of the session, and to inform him at the same time of the subjects which they propose to take. These subjects will be submitted to the Council for approval at the beginning of the session, and no student will be permitted to take any subject not so approved.

Undergraduates of the University of Toronto of the standing of the Fourth Year in the Honour Department of Chemistry and Mineralogy may be admitted as students of the fourth year in the groups C and D.

Candidates will be required to show a good working acquaintance with translation from either French or German. This will be tested by their ability to translate extracts from scientific works or periodicals not previously specified.

PASS AND HONOURS.

Total marks assigned to Fourth Year900
Subdivided as follows :—

Work (reckoned in hours)540 marks
Records (notes, drawings, etc.)360 marks

FOR PASS :

The minimum percentages are :—

Work, 75 per cent.405 marks
Records, 50 per cent.180 marks
And two-thirds of the total marks assigned600 marks

FOR HONOURS :

In deciding the allotment of honours the whole academic record of the candidate will be taken into consideration, but no honours will be granted unless the candidate shall have received a special recommendation from the member or members of Council under whose supervision his Fourth Year work has been done.

Honours granted will be mentioned in the certificate required under clause 2 of the statute of the University of Toronto respecting the degree of B.A.Sc.

The above certificate will not be granted to students who have been absent without leave of the Council from more than 10 per cent. of the lectures and practical work of either term of the session.

Courses of reading will be indicated in connection with subjects of study.

The above regulations have been approved by the Senate of the University of Toronto in so far as they affect the degree of B.A. Sc.

DEGREE OF B. A. Sc.

Candidates who have fulfilled the requirements of the Fourth Year in the School of Practical Science are eligible for the degree of Bachelor of Applied Science in the University of Toronto in accordance with a statute passed by the Senate in 1892, which, with the amendments since made, is as follows :

By the Senate of the University of Toronto.

Be it enacted :

That the Degree of Bachelor of Applied Science (B.A.Sc.) be hereby established to be granted subject to the following conditions and regulations :

1. Candidates for the said degree shall hold the diploma of the School of Practical Science in any one of the regular courses of the said School, or shall be of the standing of the Fourth Year in the Honour Department of Chemistry and Mineralogy in the University of Toronto.
2. They shall have fulfilled the conditions relating to the Fourth or Post-Graduate year in the School of Practical Science and shall present certificates of having done so to the Registrar of the University. Honours may be granted with such certificates by the Faculty of the School.
3. Each candidate shall prepare a thesis based on the results of his Fourth Year work in the said School of Practical Science for the approval of the University examiners.

DEGREES.

This thesis must be sent to the Registrar not later than the thirty-first day of March, and is to be accompanied by all necessary drawings, specifications, tables and estimates. To pass in the thesis a candidate must obtain fifty per cent. and to take honours seventy-five per cent. of the marks assigned.

4. Candidates will be required to select two sub-divisions in any one of the following groups, and to pass such written and oral examinations on the subjects selected as may be prescribed by the University examiners.

- A. { Astronomy.
Geodesy and Metrology.
- B. { Architecture.
Strength and Elasticity of Materials.
Hydraulics.
Thermodynamics and Theory of Heat Engines.
Electricity and Magnetism.
Electrochemistry.
- C. { Industrial Chemistry.
Sanitary and Forensic Chemistry.
Electrochemistry.
Inorganic and Organic Chemistry.
- D. { Metallurgy and Assaying.
Mineralogy and Geology.

The sub-division "Inorganic and Organic Chemistry" will be obligatory on all candidates who select Group C.

To pass in each subject thirty-three per cent. and to take honours sixty-six per cent. of the marks assigned will be required.

5. The degree with honours will be conferred on candidates who obtain three out of the four honours possible, viz. :
Certificate with honours(cl. 2.)
Thesis with honours(cl. 3.)
Honours in each subject of examination(cl. 4.)

6. Candidates are required to send to the Registrar of the University at least three weeks before the commencement of the annual or supplemental examinations an application for examination according to a printed form to be obtained from the Registrar, and such application must be accompanied by a fee of ten dollars.
7. The annual examinations for the degree shall be held in April, and the supplemental examinations in September.
8. The fee for the degree shall be ten dollars and shall be paid to the Registrar not later than the day preceding the first day of the annual examinations.
9. The ordinary time for conferring the degree shall be at the University commencement in June. The degree may be conferred at any meeting of the Senate.
10. The thesis, drawings and other papers accompanying them, shall be the property of the School of Practical Science.
11. In case any change shall be made in the conditions referred to in the second clause, such change shall be submitted to the Senate, and shall have no force so far as the said clause is concerned unless approved by resolution of the Senate.

SUBSEQUENT PROFESSIONAL DEGREES.

The attention of graduates is directed to the following statute, passed by the Senate of the University of Toronto in 1896 :

By the Senate of the University of Toronto.

Be it enacted :

- I. That all previous Statutes of the University relating to degrees or diplomas in Engineering be repealed.
- II. That the following degrees be hereby established, viz., Civil Engineer (C.E.), Mining Engineer (M.E.), Mechanical Engineer (M.E.), Electrical Engineer (E.E.).
- III. That the following be the conditions and regulations governing the conferring of the said degrees.

1. A candidate for one of the said degrees shall hold the diploma of the School of Practical Science and the degree of Bachelor of Applied Science of the University of Toronto, except in the case provided for in clause 11 hereunder.
2. He shall have spent at least three years after receiving the degree of Bachelor of Applied Science in the actual practice of the branch of engineering wherein he is a candidate for a degree.
3. Intervals of non-employment or of employment in other branches of engineering shall not be included in the above three years. It shall not be necessary that the several periods requisite to make up the said three years be consecutive.
4. Satisfactory evidence shall be submitted to the University examiners as to the nature and length of the candidates' professional experience for the purposes of clauses 2 and 3.

The Examiners shall satisfy themselves by oral or written examinations in regard to the candidate's experience and competence.

5. The candidate shall prepare an original thesis on some engineering subject in the branch in which he wishes a degree; the said thesis to be accompanied by all necessary descriptions, details, drawings, bills of quantities, specifications and estimates.

The candidates may be required at the option of the Examiners to undergo an examination in the subject of this thesis.

6. Notice in writing shall be sent to the Registrar not later than the first day of February, informing him of the degree to which the candidate wishes to proceed and of the title of his proposed thesis for the approval of the Senate.
7. The evidence under clause 4, and the thesis, with accompanying papers, described in clause 5, shall be sent to the Registrar not later than the first day of April.

8. The candidate shall be required to present himself for examination in the month of April at such time as may be arranged by the Registrar.
9. The fee for any one of the said degrees shall be twenty dollars, and shall be paid to the Bursar not later than the first day of April.
10. The thesis, drawings, and other papers submitted under clause 7 shall become the property of the School of Practical Science.
11. Candidates who graduated from the School of Practical Science before June, 1895, shall not be required to hold the degree of Bachelor of Applied Science.

For further particulars apply to the Registrar of the University of Toronto.

For the better carrying out of the provisions of the above statute the following statute constituting the Board of Examiners for professional degrees in Engineering was passed by the Senate on December 14th, 1900.

By the Senate of the University of Toronto.

Be it enacted :

1. That the Examiners for the degrees of Civil Engineer (C.E.), Mining Engineer (M.E.), Mechanical Engineer (M.E.), and Electrical Engineer (E.E.), be appointed at least twelve months in advance of the date of the examinations for which their services are required.
2. That the said Examiners constitute the Board of Examiners for degrees in Engineering.
3. That the members of the Board shall select one of their number to act as chairman within one month from the date of their appointment.
4. That candidates for examination applying to the Registrar for information respecting the nature or details of the examinations for the said degrees, shall be directed by him to communicate with the chairman of the said Board, who shall forward to the candidates either directly or through the Registrar the decision of the Board.

5. That the chairman of the said Board shall keep a record book in which he shall enter the minutes of the proceedings of the Board. He shall also keep a file in book form of all correspondence with candidates for examination and other official correspondence; and shall at the close of the examinations transmit to the Registrar a copy of the said minutes and correspondence.
6. That at the close of the examinations, the Board shall forward a report of the results to the Registrar for transmission to the Senate. The report shall be signed by the Examiners or by the Chairman of the Board on their behalf.
7. That the Registrar shall furnish each Examiner on his appointment with a copy of this statute and a copy of the statute respecting degrees in Engineering.

Extract from the Provincial Act Respecting Land Surveyors and Survey of Lands. (R.S.O.

“26. Any person serving as an apprentice as hereinafter provided, may, with the permission of the Board of Examiners, attend the Ontario School of Practical Science, or any school, college or university, the course of study in which is in the opinion of the Board sufficiently similar to that in the Ontario School of Practical Science, for the purpose of taking any course of study which includes any subjects required for the final examination for admission to practice as a land surveyor, but the total period of such apprenticeship and of such course of study shall not exceed the period of four years from the date of the articles of apprenticeship as above mentioned, and not less than three years of the said period of four years shall be passed in the actual service of a practicing Ontario Land Surveyor.

“28. The privilege of a shortened term of apprenticeship shall also be accorded to any graduate of the Royal Military College at Kingston and of the Ontario School of Practical Science in civil engineering or in mining engineering, or of the McGill College, Montreal, in civil engineering or in mining engineering, and such person shall not be required to pass the preliminary examination hereinbefore required for admission to apprenticeship with a land surveyor, but shall

only be required to serve under articles with a practicing land surveyor duly filed as required by section 32 of this Act, during twelve successive months of actual practice, after which, on complying with all the other requirements, he may undergo the examination prescribed by this Act.

“29. Such person at any time during his apprenticeship may, with the permission of the Board of Examiners, attend the Ontario School of Practical Science, or any school, college or university, the course of study in which is, in the opinion of the Board, sufficiently similar to that in the Ontario School of Practical Science, for the purpose of taking any course of study which includes any subject required for the final examination for admission to practice as a land surveyor, but the total period of such apprenticeship, and of such course of study, shall not exceed the period of two years from the date of the articles of apprenticeship as above mentioned, and not less than twelve months of the said period of two years shall be passed in the actual service of a practicing Ontario Land Surveyor.”

Extract from the Dominion Lands Act.

“Every graduate in surveying of the Royal Military College of Canada, and every person who has followed a regular course of study in all branches of education required by this Act for admission as a Dominion Land Surveyor, through the regular sessions, for at least two years in any college or university where a complete course of theoretical and practical instruction in surveying is organized, and who has thereupon received from such college or university a diploma as civil engineer, shall be exempt from serving three years as aforesaid, and shall be entitled to examination after one year's service under articles with a Dominion land surveyor, at least six months of which service has been in the field, on producing the affidavit required by the next preceding clause as to such service; but it shall rest with the Board to decide whether the course of instruction in such college or university is that required by this clause.”

The attention of the candidates for the Diploma of D.T.S. given by the Dominion Board of Examiners, is directed to the facilities afforded for preparation in the School.

Extract from the Ontario Architects Act.

“Any student who has matriculated in Arts in any University in His Majesty’s dominions, or in the Ontario School of Practical Science, shall not be required to pass the preliminary examinations.

“23. Any person who applies for admission to registration as an architect after the coming into force of this Act, shall be not less than twenty-one years of age, shall have served as a student not less than five years with a principal or principals entitled to register under this Act, or with any other principal or principals approved by the Council, and have passed such qualifying examinations as may be required by this Act.

“24.—(3) Any person who has graduated from the Ontario School of Practical Science shall be required to serve only three years as a student, one of which three years may be served during the vacation of such school.

“(4) Upon and after the passing of this Act, students shall serve such term as is required to be served by the provisions of this Act, under indenture to be a registered architect, which indenture and any assignment thereof with affidavit of execution thereto attached shall be filed with the Registrar upon payment of such fees as the council may by regulation direct.

SYNOPSIS OF THE COURSES OF LECTURES AND PRACTICAL INSTRUCTION.

Subjects Taught by the Faculty of the School.

Subjects.	Instructors.
Organic and Inorganic Chemistry, Applied Chemistry, Assaying,	<div style="display: flex; align-items: center;"> <div style="font-size: 4em; margin-right: 10px;">}</div> <div> <p>W. H. Ellis, M.A., M.B., Professor.</p> <p>J. W. Bain, B.A.Sc., Lecturer.</p> <p>E. G. R. Ardagh, B.A.Sc., Demonstrator.</p> <p>M. C. Boswell, M.A., B.A.Sc., Demonstrator.</p> <p>E. Wade, Grad. S.P.S. Fellow.</p> <p>S. Dushman, B.A. Fellow.</p> </div> </div>
Geology, Metallurgy, Mining and Oredressing, Milling, German,	<div style="display: flex; align-items: center;"> <div style="font-size: 4em; margin-right: 10px;">}</div> <div> <p>A. P. Coleman, M.A., Ph.D., Professor.</p> <p>G. R. Mickle, B.A., Lecturer.</p> <p>J. G. McMillan, B.A.Sc., Demonstrator.</p> </div> </div>
Dynamics, Strength of Materials, Theory of Construction, Machine Design, Theory of Mechanism, Compound Stress, Hydraulics, Thermodynamics, and Theory of the Steam Engine,	<div style="display: flex; align-items: center;"> <div style="font-size: 4em; margin-right: 10px;">}</div> <div> <p>J. Galbraith, M.A., LL.D., Professor.</p> <p>R. W. Angus, B.A.Sc., Lecturer.</p> <p>J. McGowan, B.A., B.A.Sc., Lecturer.</p> <p>P. Gillespie, B.A.Sc., Lecturer.</p> <p>E. W. Walker, B.A.Sc., Fellow.</p> <p>W. W. Gray, B.A.Sc., Fellow.</p> </div> </div>
French, Statics, Drawing, Architecture, Plumbing, Heating and Ventilation, Mortars and Cements,	<div style="display: flex; align-items: center;"> <div style="font-size: 4em; margin-right: 10px;">}</div> <div> <p>C. H. C. Wright, B.A.Sc., Professor.</p> <p>J. R. Cockburn, B.A.Sc., Lecturer.</p> <p>D. T. Townsend, B.A.Sc., Fellow.</p> <p>J. D. Sheply, B.A.Sc., Fellow.</p> <p>W. M. Bristol, Grad. S.P.S., Fellow.</p> <p>C. B. Aylsworth, Grad. S.P.S., Fellow.</p> </div> </div>
Brick and Stone Masonry, Surveying, Geodesy and Astronomy, Spherical Trigonometry, Least Squares, Descriptive Geometry,	<div style="display: flex; align-items: center;"> <div style="font-size: 4em; margin-right: 10px;">}</div> <div> <p>S. E. McGorman, Grad. S.P.S., Fellow.</p> <p>L. B. Stewart, D.T.S., Professor.</p> <p>C. M. Teasdale, B.A.Sc., Fellow.</p> <p>S. R. Crerar, B.A.Sc., Fellow.</p> <p>W. E. Douglas, B.A., Fellow.</p> </div> </div>

Subjects Taught by the Faculty of the School.—*Continued.*

Electricity,	}	T. R. Rosebrugh, M.A., Professor.
Magnetism,		H. W. Price, B.A.Sc., Lecturer.
Dynamo-Electric Machinery,		H. G. Smith, B.A.Sc., Demonstrator.
Mechanics of Machinery,		R. H. Armour, Grad., S.P.S., Fellow.
		R. B. Ross, Grad., S.P.S., Fellow.
Sound,	}	G. R. Anderson, M.A., Lecturer.
Light, Heat,		L. W. Morden, Grad., S.P.S., Fellow.
Hydrostatics,		

Subjects Taught by the Faculty of the University.

Subjects.	Instructors.
Algebra, Euclid, Plane Trigonometry, Analytical Geometry, Calculus, Astronomy,	<div><div>Alfred Baker, M.A., Professor. A. T. DeLury, B.A., Associate Professor. J. C. Fields, B.A., Ph.D., Associate Professor. M. A. McKenzie, M.A., Associate Professor. J. G. Parker, B.A., Fellow.</div></div>
Biology, Mineralogy, Petrography, Chemistry,	<div><div>R. Ramsay Wright, M.A., LL.D., Professor. W. R. Lang, D.Sc., Professor. T. L. Walker, M.A., Ph.D., Professor. W. L. Miller, B.A., Ph.D., Associate Professor. W. Parks, B.A., Ph.D., Lecturer. F. B. Kenrick, M.A., Ph.D., Lecturer. F. B. Allan, M.A., Ph.D., Lecturer. J. S. DeLury, B.A., Fellow.</div></div>

DRAWING.

Model drawing, machines and structures, map and topographical drawing, designs and estimates, graphical calculations.

Descriptive geometry, including practical geometry (plane and solid), orthographic, oblique and perspective projections; intersection of surfaces, shades and shadows, stone cutting, theory of mechanism, theory of mapping, etc.

Text Books and Books of Reference.

Angel—Plane and Solid Geometry.

Binn—Orthographic Projection.

Church—Descriptive Geometry.

Davidson—Projections.

Low—Machine Drawing and Design.

Millar—Descriptive Geometry.

MacCord—Lessons in Mechanical Drawing.

Reinhardt—Lettering for Draughtsmen, Engineers and Students.

Vere Foster—Copy Book No. 10.

Warren—Stone Cutting.

Worthen—Topographical Drawing.

SURVEYING AND LEVELLING.

LAND SURVEYING.

Chain Surveys.

Compass and theodolite surveys.

Method of keeping field notes.

Determination of heights and distances.

Plotting.

LEVELLING.

Longitudinal and cross sections.

Plotting.

SETTING OUT.

Setting out straight lines and curves.

Setting out levels.

MENSURATION.

Lines, surfaces and solids.

Timber, masonry, iron and earthwork.

Capacity of reservoirs, etc.

Lectures are also given on the distinctive features of Mining and Hydrographic Surveying.

Text Books.

Brough—Mine Surveying.

Gillespie—Higher Surveying.

Henck or Searle—Railway Curves.

Johnson—Theory and Practice of Surveying.

Murray—Manual of Land Surveying.

PRACTICAL ASTRONOMY AND GEODESY.

ORDINARY COURSE.

The work included in this course is sufficient to fulfill the requirements of the final examination for Ontario and Dominion land surveyors.

In astronomy the principal subjects are the determination of time, latitude and azimuth, and the general principles of the method of determining longitude. Practical instruction is given in the methods of taking observations.

In geodesy all surveys, computations and methods of map construction are based upon the requirements of secondary triangulation.

ADVANCED COURSE (Fourth Year).

The work of this course is intended to fulfill the requirements of the final examinations for Dominion Topographical Surveyors. It is distinguished from the

work of the ordinary course not so much by the subjects as by the degree of refinement to which the investigations are carried.

In geodesy the requirements of primary triangulation are kept in view.

Text Books.

Chauvenet—Spherical and Practical Astronomy.

Doolittle—Practical Astronomy.

Gillespie—Higher Surveying.

Gore—Elements of Geodesy.

Green—Spherical and Practical Astronomy.

Helmert—Hohere Geodasie.

Nautical Almanac, 1906.

APPLIED MECHANICS.

STATICS.

The calculation of the stresses in framed structures, solid and riveted beams, arches, etc. Both graphical and analytical methods used.

THEORY OF THE STRENGTH AND ELASTICITY OF MATERIALS.

THEORY OF COMPOUND STRESS.

DESIGNING OF STRUCTURES in timber, iron and masonry—arches, retaining walls, roofs, bridges, etc.

DYNAMICS.

Representation and measurements of forces and motions.

Principles of work and energy.

Efficiency of machine. Friction.

Transmission of energy—belts, shafts, crank and connecting rod, etc.

Fly-wheels, governors.

Balancing of machinery, etc., etc.

STRENGTH OF THE PARTS OF MACHINES.

MACHINE DESIGN.

HYDRAULICS.

Discharge of water through orifices, notches, etc. Flow in pipes and open channels. Sewerage, water-works, water-power, water-wheels, turbines, pumps, etc.

THERMODYNAMICS AND THEORY OF THE STEAM ENGINE.

Text Books and Books of Reference.

- Baker—Masonry Construction.
Billings—Heat and Ventilation.
Bodmer—Hydraulic Motors, Turbines, etc.
Cambria Steel.
Carnegie Pocket Companion.
Carpenter—Heating and Ventilation of Buildings.
Carpenter—Experimental Engineering.
Du Bois—Graphic Statics.
Du Bois—Strains in Framed Structures.
Foster—Electrical Engineers' Pocket Book.
Gerhardt—House Drainage and Sanitary Plumbing.
Greene—Trusses and Arches.
Innes—Centrifugal Pumps, Turbines and Water Motors.
Johnson—Modern Frame Structures.
Johnson—Materials of Construction.
Kennedy—Mechanics of Machinery
Kent—Mechanical Engineers' Pocket Book.
Ketchum—Steel Mill Buildings.
Kidder—Building Construction and Superintendence.
Kidder—Architect and Builders' Pocket Book.
Lanza—Applied Mechanics.
Low and Bevis—Machine Drawing and Design.
Low—Machine Drawing.
Merriman and Jacoby—Roofs and Bridges.
Merriman—Mechanics of Materials.

Merriman—Hydraulics.
Patton—Foundations.
Peabody—Thermodynamics.
Peabody—Steam Tables.
Rafter and Baker—Sewage Disposal in the United States.
Rankine—Applied Mechanics.
Reuleaux—The Constructor.
Santo Crimp—Sewage Disposal Works.
Shann—Elementary Treatise on Heat.
Trautwine—Engineers' Pocket Book.
Unwin—Elements of Machine Design.
Unwin—Testing of Materials of Construction.
Von Ott—Graphic Statics.
Williamson—Elasticity.

THEORY OF MECHANISM.

Principles of the transmission of motion without reference to force.

Pitch surfaces, spur wheels, bevel wheels, skew-bevel wheels, trains of wheelwork, teeth of wheels, cams, cranks, eccentrics, links, bands and pulleys, hydraulic connections, frictional gearing, link motion for slide valves, etc.

Text Books and Books of Reference.

Auchincloss—Valve and Link Motions.
Goodeve—Elements of Mechanism.
Halsey—Slide Valve Gears.
Kennedy—Mechanics of Machinery.
Rankine—Machinery and Millwork.
Reuleaux—Kinematics and Machinery.

ELECTRICITY.

Instruction is given in this subject by a course of lectures and by work in the laboratories of the School.

The work comprises :—

INTRODUCTORY COURSE.

Lectures treating the principles of magnetism, electrostatics, electromagnetism and current electricity in an elementary manner.

Lectures on electric circuits, wiring and distribution by feeders.

Short laboratory course.

ELECTRICAL MEASUREMENTS.

Lectures and laboratory work on electrical measurements; including various cases of resistance measurement, comparison of standards of resistance, measurement of electromotive force, standard cells, current measurements, applications to calibration of electrical measuring instruments, photometry and properties of incandescent lamps, location of faults.

DYNAMO ELECTRIC MACHINERY.

Electromagnetism and theory of direct current dynamo-electric machinery.

Laboratory work on the magnetic field of the earth, tangent galvanometer, induction and hysteresis in iron, Hopkinson's Law, ballistic galvanometer and condenser, arc lamps, fusing currents, insulation and disruption tests of dielectrics, brush contact resistance, magnetization and load curves, characteristics of shunt, series and compound wound dynamos, motor characteristics, brake test, stray power loss and efficiency, armature reaction, dispersion coefficient, temperature rise.

Armature windings, thermal and electromagnetic relations, design.

Alternating current machinery and circuits. Laboratory work including measurement of inductance, calibration of A. C. instruments, wave tracing, phase relations, transformer impedance, core loss, efficiency and regula-

tion, alternator characteristics, motor tests, measurement of power in polyphase circuits, constant current transformer, series A. C. arc lamps, photometry of incandescent and Nernst lamps.

ADVANCED COURSE (Fourth Year).

Applications of vectors and complex quantities in the theory of alternating currents, the alternator single phase and polyphase. Theory of the synchronous motor, rotary converter and induction motor. The transformer and combination of transformers. Theory of polyphase power transmission. Operation of long lines considering distributed capacity, resistance and inductance. Experimental inspection of calculations and determination of characteristics of alternator synchronous motor, single phase and polyphase induction motors, and other practical problems.

The above courses may all be taken by students in Mechanical and Electrical Engineering who take the "electrical option." Shorter courses are also arranged for students in other departments.

Text Books and Books of Reference.

- Bedell and Crehore—Alternating Currents.
- Bedell—Principles of the Transformer.
- Bell—Electric Power Transmission.
- Carhart and Patterson—Electrical Measurements.
- Ewing—Magnetic Induction in Iron.
- Fleming—Alternate Current Transformers, Vols. I. and II.
- Franklin and Williamson—Alternating Currents.
- Hooper and Wells—Electrical Problems.
- Jackson—Electromagnetism and the Construction of Dynamos.
- Kempe—Electrical Testing.
- Loudon and McLennan—Practical Physics.
- Parshall and Hobart—Armature Winding.
- Parshall and Hobart—Electric Generators.

Raymond—Alternating Current Engineering.
 Ryan, Norris and Hoxie—Text book of Electrical Machinery.
 Steinmetz—Elements of Electrical Engineering.
 Steinmetz—Alternating Current Phenomena.
 Stewart and Gee—Practical Physics.
 Thompson, S. P.—Dynamo Design.
 Thompson, S. P.—Elementary Electricity and Magnetism.
 Thompson, S. P.—Dynamo Electric Machinery.
 Thompson, S. P.—Polyphase Currents.
 Wiener—Dynamo Electric Machines.

ARCHITECTURE.

HISTORY OF ARCHITECTURE.

Egyptian, Assyrian and Persian.
 Classic.
 Romanesque and Byzantine.
 Gothic.
 Renaissance.

ORDERS OF ARCHITECTURE.

HISTORY OF ORNAMENT.

PRINCIPLES OF DECORATION.

PRINCIPLES OF PLANNING.

ELEMENTS OF DESIGN.

Text Books and Books of Reference.

Fergusson—History of Architecture.
 Fletcher—A History of Architecture.
 Gwilt—Encyclopaedia of Architecture.
 Leeds—Orders of Architecture.
 Osborne—Art of House Planning.
 Owen Jones—Grammar of Ornament.

Racinet—L'Ornement Polychrome.
 Rickman—Gothic Architecture.
 Sharpe—Seven Periods of Church Architecture.
 Smith, T. Roger—Classic and Early Christian Architecture.
 Smith, T. Roger—Gothic and Renaissance.
 Stratham—Architecture for General Readers.
 Sturgis—European Architecture.
 Vignole—The five Orders of Architecture.

MATHEMATICS.

The pure Mathematics included in this course is taught by the Faculty of Arts.

ALGEBRA.

PLANE TRIGONOMETRY.

ANALYTICAL GEOMETRY.

CALCULUS.

PLANE ASTRONOMY.

Text Books and Books of Reference.

Hall and Knight—Plane Trigonometry.
 Loomis—Calculus.
 Mackay—Elements of Euclid.
 Newcombe and Holden—Astronomy.
 Osborne—Calculus.
 C. Smith—Conic Sections.
 Todhunter—Algebra.
 Todhunter—Spherical Trigonometry.

OPTICS.

Laws of reflection and refraction.
 Optical constants of mirrors, lenses, etc.
 Theory of optical instruments.

HYDROSTATICS.

Laws of fluids at rest.
 Hydrostatic machines.
 Buoyancy.

HEAT.

Thermometry and calorimetry.
Coefficients of expansion.
Mechanical equivalent.

ACOUSTICS.

Mode of propagation and velocity of sound.
Laws of vibrating bodies.
Architectural acoustics.

Text Books and Books of Reference.

Edser—Light.
Edser—Heat.
Glazebrook—Heat.
Glazebrook—Light.
Glazebrook—Hydrostatics.
Tyndall—Sound.
Hastings and Beach—General Physics.
Deschanel—Principles of Physics.
Ames & Bliss—Manual of Experiments in Physics.
Lummer—Photographic Optics.
Preston—Theory of Heat.
Preston—Theory of Light.
Poynting and Thomson—Sound.

CHEMISTRY.

COURSES IN THE SCHOOL OF PRACTICAL SCIENCE.

Inorganic and Organic chemistry.
Applied chemistry.
The chemistry of combustion, fuels, furnaces, artificial lighting, explosives, photography, building materials, water, air, sewage, chemical manufactures.
Laboratory work, including technical analysis, the analysis of food, water and air, and toxicology.

COURSES IN THE UNIVERSITY OF TORONTO.

Organic chemistry.
Physical chemistry.

Text Books and Books of Reference.

- Allen—Commercial Organic Analysis.
Arnold—Steel Works Analysis.
Beilstein—Organic Chemistry.
Beringer—Text Book of Assaying.
Blair—Chemical Analysis of Iron and Steel.
Blount—Electrochemistry.
Bloxam—Chemistry.
Bloxam and Blount—Chemistry for Engineers and Manufacturers.
Blyth, A. W.—Poisons.
Blyth, A. W.—Foods.
Bolley—Handbuch der Chemischen Technologie.
Dammer—Handbuch der Anorganischen Chemie.
Douglas and Johnston—Qualitative Analysis.
Fresenius—Qualitative and Quantitative Analysis.
Furman—Manual of Practical Assaying.
Hempel—Gas Analysis.
Holleman—Inorganic Chemistry.
Holleman—Organic Chemistry.
Jones—Practical Chemistry.
Lord—Notes on Metallurgical Analysis.
Lunge—Sulphuric Acid and Alkali.
Lunge—Coal Tar and Ammonia.
Meyer—History of Chemistry.
Miller—Quantitative Analysis for Mining Engineers.
Miller and Smale—Qualitative Analysis.
Morgan—Elements of Physical Chemistry.
Newth—Manual of Chemical Analysis.
Noyes—Qualitative Chemical Analysis.
Ostwald—Lehrbuch der Allgemeinen Chemie.
Ostwald—Outlines of General Chemistry.
Ostwald—Principles of Inorganic Chemistry.
Pattison Muir—Thermochemistry, Elements of.
Perkin—Qualitative Analysis.
Perkin and Kipping—Organic Chemistry.
Poole—Calorific Value of Fuels.

Post—Chemisch-technische Analyse.
 Remsen—Inorganic and Organic Chemistry.
 Richter—Inorganic and Organic Chemistry.
 Roscoe and Schorlemmer—Treatise on Chemistry.
 Sadtler—Organic and Applied Chemistry.
 Sutton—Volumetric Analysis.
 Thorp—Outlines of Industrial Chemistry.
 Thorpe—Dictionary of Applied Chemistry.
 Thorpe—Quantitative Analysis.
 Treadwell—Lehrbuch der Analytischen Chemie.
 Wagner—Chemical Technology.
 Walke—Lectures on Explosives.
 Watt—Dictionary of Chemistry.
 Wiechman—Sugar Analysis.
 Winkler—Gas Analysis.

ELECTROCHEMISTRY.

Text Books and Books of Reference.

Arrhenius—Lehrbuch der Elektrochemie.
 Blount—Electrochemistry.
 Borchers—Electric Smelting and Refining.
 Dolezalek—The Accumulator.
 Elbs—Electrolytic Preparations.
 Jaeger—Normalelemente.
 Le Blanc—Electrochemistry.
 Lehfelddt—Electrochemistry.
 Liebetanz—Calciumcarbid and Acetylen.
 Lorenz—Elektrochemisches Praktikum.
 Luepke—Elements of Electrochemistry.
 Minet—Gewinnung des Aluminiums.
 Moissan & Lenher—The Electric Furnace.
 Oettel—Electrochemische Uebungsaufgaben.
 Wade—Secondary Batteries.

MINERALOGY, GEOLOGY AND METALLURGY.

1. Mineralogy and Geology.

Geology and Palaeontology.

Mineralogy and Crystallography.

- Petrography.
- Physical geography.
- Blowpipe analysis.
- Determinative mineralogy.
- 2. Mining and Metallurgy.
 - Mining Geology.
 - Ore dressing.
 - Metallurgy of iron and steel.
 - Metallurgy of gold, silver, copper, nickel, etc.
 - Assaying.
 - Milling.

Text Books and Books of Reference.

- Chapman or Brush—Mineral Tables.
- Chapman—Mineralogy and Geology of Canada.
- Crosby—Determination of Minerals.
- Dana—Manual of Geology.
- Dana—Minerals and how to study them.
- Dana—Text Book of Mineralogy.
- Furman—Assaying.
- Geikie—Text Book of Geology.
- Harker—Petrography for Students.
- Howe—Metallurgy of Steel.
- Ihlseng—Manual of Mining.
- Kemp—Handbook of Rocks.
- Kemp—Ore Deposits of the United States.
- Kuhnhardt—Ore Dressing.
- Nicholson—Palaeontology.
- Peters—Modern Copper Smelting.
- Phillips—Ore Deposits.
- Phillips and Bauerman—Elements of Metallurgy.
- Plattner—Manual of Blowpipe Analysis.
- Roberts-Austen—Metallurgy.
- Rose—Metallurgy of Gold.
- Rosenbusch—Petrography.
- Williams—Crystallography.

THERMODYNAMIC LABORATORY.

The thermodynamic laboratory contains a 50-horse power Brown engine. The engine was constructed especially for experimental investigations, and the cylinder has steam jackets on the body and both ends, arranged so that any or all of them may be used at once, or that all may be shut off as desired. The exhaust steam may be passed through a feed-water heater to the open air, or to a jet condenser or to a Wheeler surface condenser, the latter of which was kindly presented to the School by the inventor, Mr. F. M. Wheeler, of New York.

A compound Willans engine has recently been installed as a part of this laboratory. This engine is so arranged that it may be run condensing or non-condensing and it may also be converted into a simple engine if desired, thus allowing considerable latitude in the way of experimental work.

A De Laval turbine has also been placed in the laboratory, and is arranged with two alternative exhausts, directly to the atmosphere and to a surface condenser, suitable nozzles being provided for either purpose.

There are also a Blake circulating pump, a Knowles air pump, and a Blake feed pump, which was a gift of the manufacturers. Several injectors of various types are also available for experimental work and examination.

The steam for the plant is supplied by a Babcock & Wilcox boiler, and a Harrison-Wharton boiler.

An Otto gas engine completes the experimental equipment of this laboratory. There are, in addition, the usual measuring instruments required in thermodynamic investigations, among which may be mentioned indicators of various types, gauges, gauge testing apparatus, calorimeters, both throttling and separating, scales, brakes, dynamometers, anemometers, thermometers, a platinum and platino-rhodium thermo-couple, and other instruments.

HYDRAULIC LABORATORY.

This laboratory contains two large steel tanks arranged for the experimental study of the flow of water through orifices and over weirs. Both orifices and weirs may be conveniently changed.

The discharge is measured by two tanks which are filled and emptied alternately by means of four valves operated by a single lever, thus enabling the measuring to be continued for any length of time without interrupting the flow.

The water is supplied by a new centrifugal pump of latest design and construction. This pump is so designed that it will give a discharge of 1,000,000 gallons per 24 hours, or it may be arranged to give half the discharge against double the head. In addition to being useful as a pump to supply water for the hydraulic work it forms an excellent piece of laboratory equipment and is so arranged that experiments may be made on it as to discharge and efficiency under varying conditions of speed and head.

For the work on turbines, etc., a six-inch New American turbine, the gift of the firm of William Kennedy & Sons, Owen Sound, has been set up so that efficiency determinations under different gate openings and heads may be made. In addition to this a thirty-six inch axial impulse turbine, and a Pelton wheel, each being provided with suitable brakes, means of accurately measuring the discharge continuously, and other requirements for experimental work have been installed. There are also three centrifugal pumps, one made by the Morris Machine Works, another which has been kindly presented to the School by the Northey Co., Limited, Toronto, the manufacturers, and a third which has been specially designed and built for a more careful line of experimental work than is possible with the ordinary commercial pump of this class. A dynamometer and other necessary apparatus are provided for adapting these pumps to scientific investigations.

A Venturi meter has also been installed, and apparatus has been arranged so that the discharge from different forms of nozzles, and the frictional losses in elbows, valves, etc., may be determined.

There are the usual measuring instruments, gauges, gauge-testing apparatus, scales, brakes and dynamometers, and a nine-inch McCormick turbine.

STRENGTH OF MATERIALS LABORATORY.

The machines in this department are the following :

An Emery 50-ton machine, built by William Sellers & Co. of Philadelphia, for making tests in tension and compression.

A Reihle 100-ton machine for making tests in tension, compression, shearing and cross-breaking. It will take in posts twelve feet long and beams up to eighteen feet in length.

A Reihle 10-ton universal testing machine.

An Olsen torsion machine for testing the strength and elasticity of shafting. This machine will twist shafts up to sixteen feet in length and two inches in diameter.

A Reihle transverse testing machine of 5,000 pounds capacity adapted to specimens up to 48 inches in length.

A Reihle abrasion machine, for testing the resistance to attrition of stones, brick, etc.

Extensometers of the Bauschinger, Unwin, Marshall and other types, besides a large number of micrometers and scales.

The shop is equipped with a number of high-class machine tools specially fitted for reducing the specimens to the requisite shapes and dimensions with a minimum of hand labor. It is also supplied with the necessary appliances for making ordinary repairs and for making special apparatus for original investigations.

CEMENT TESTING LABORATORY.

This department is fitted with all the usual moulds, gravimeters, tables and tank accommodation necessary in a well equipped laboratory.

In this laboratory there are also the following :

A Reihle 2,000 pounds machine, fitted for either tension or compression.

A Reihle 600-pounds machine fitted for tension only.

An extra large Faija's hot bath apparatus.

METROLOGICAL LABORATORY.

In the geodetic and astronomical departments are a 100-foot and a 66-foot standard of length; a 10-foot Rogers comparator with a graduating attachment; a Kater's pendulum with a vacuum chamber; a Howard astronomical clock and electro-chronograph; a sidereal chronometer, a zenith telescope, a Troughton & Simms 10-inch theodolite, a level trier, thirteen surveyor's transits, ten levels, compasses, sextants, plane tables, micro-meters, planimeters, etc.; and all the necessary field instruments.

ELECTRICAL LABORATORY.

Galvanometer laboratories :—Two laboratories are equipped with numerous galvanometers, resistance boxes, bridges, potentiometers, standard resistances, standard cells, etc., and much other usual and special apparatus for varied commercial and special electrical experiments of the more delicate variety.

A third laboratory is fitted more especially for calibration of electrical instruments for alternating and direct current. Some seventy portable measuring instruments are located in this laboratory available for students' use, also standard instruments including Weston laboratory standards, Kelvin balance, etc., with which the portable instruments may be compared.

Photometric laboratory :—This laboratory contains apparatus for studying the various types of arc and incandescent lamps. Series and multiple alternating and direct current lamps, incandescent, Nernst, tantalum, etc., lamps are represented.

Direct current machine laboratory:—This laboratory contains twelve dynamos and motors varying in capacity from 2 to 20 kilowatts, adapted for varied experiments illustrating the properties of compound, shunt and series dynamos and motors, arc machines, etc., switchboards, numerous rheostats, lamp racks, starting boxes, circuit breakers, flexible cables, brakes, torsion dynamometers, tachometers, etc., are available for use with the machines. The students are supplied with the best standard portable ammeters and voltmeters obtainable.

Alternating current machine laboratory:—This laboratory contains two special 15 k.w. General Electric polyphase revolving field alternators direct-driven through torsion dynamometers by Westinghouse motors, a 10 k.w. rotary converter, a special $7\frac{1}{2}$ k.w. General Electric polyphase induction motor with open rotor circuits, Wagner signal phase motor, Westinghouse single phase series motor, Westinghouse alternator, and several three-phase induction motors; also transformers, reactive coils, lamp racks, rheostats, circuit breakers, flexible cables, brakes and other details for experiments on the properties of alternating currents and alternating current apparatus in general. A constant-current transformer with full load of series arc lamps, three oscillographs for studying wave forms, a high-potential transformer and a mercury arc rectifier may also be mentioned. The students are supplied with the best Weston, Westinghouse and Thomson portable ammeters, voltmeters, wattmeters, frequency meters, synchroscopes, tachometers, etc., for measuring purposes.

MINERALOGICAL LABORATORY.

Provision is made for the introduction of first and second year students to the study of the most important minerals, by actually determining for themselves the chief physical and morphological properties of these minerals. Special laboratories for the study of blow-pipe analysis and determinative mineralogy are available for the use of second and third year students.

Special sets of rocks are arranged for the use of the students of the second year, while the more advanced work in this subject

is amply provided for in the laboratories for the preparation and study of thin sections of rocks, and for the chemical analysis of minerals and rocks.

Among the collections of specimens is the Ferrier Mineral Collection, arranged systematically and exposed in glass cases so as to be always available for the use of students as a type or reference collection.

ASSAYING LABORATORIES.

Two assaying laboratories are situated in the basement of the Chemistry and Mining building, one has a floor space of 17 ft. x 47 ft. and the other 28 ft. x 37 ft., adjoining each is a room 15 ft. x 11 ft. with the necessary equipment for the wet work in connection with assaying. Common to both laboratories is a balance room furnished with gold balances set on a concrete pier. Each of the laboratories contains a number of melting holes (18 in all) for crucible fusions, various gas furnaces both for crucibles and mufflers, and a large brick muffle furnace.

The furniture comprises lockers for the students, tables for the pulp balances and the necessary cabinets and shelving.

Adjoining the assay laboratories is a preparation room (19 ft. x 13 ft.) which is equipped with a motor, crusher, pulverizer, sample grinder and all the necessary hand pulverizers, screens, etc., for preparing ores for assay.

MILLING PLANT.

A detached building contains the milling and concentrating equipment. It is heated, lighted and supplied with power from the main building and is divided into five rooms. The mill room is 53 ft. x 72 ft. in area and 22 ft. high and the equipment already installed and working consists of a 15 h.p. motor, a five stamp battery erected on concrete foundation, Challenge ore Feeder, amalgamating plates, and a Wilfley table for concentration, a clean-up pan, steel settling tanks, a steel tank suspended from the roof girders to furnish a constant supply of water, and a track with travelling crawl to transport ore. The machinery was furnished and erected by the Wm. Hamilton Manufacturing Co. of Peterboro.

The other rooms in the building are a store room for ore, which also contains a 30 h. p. motor to drive the machinery in the next room which is devoted to crushing of ores, preparatory to their treatment in the milling room, and is equipped with a gyrating crusher of Hadfield's make, a set of Hamilton rolls 16 inches by 12 inches, platform scales for weighing ore and a jib, crane, buckets, pulleys, etc., for handling the rock. The area of this room is 476 square feet.

The other two rooms each 17 ft. by 15 ft. will be used for future additions.

The mill-room affords the student an excellent opportunity of studying milling, as all the machines in use are of the same construction as those employed in the best large mills.

Two other rooms have been fitted up with a large brick assay furnace, and a reverberatory furnace for roasting sulphide and arsenical ores; leaching vats for treating ores by the cyanide process, and a chlorination barrel.

PHYSICAL LABORATORIES.

The Optical laboratory is equipped with optical benches and accessories for determining the optical constants of mirrors, lenses and lens combinations and for demonstrating the construction and use of telescopes, field glasses, microscopes, etc. There is also a full equipment of optical instruments, including telescopes, microscopes, field glasses, comparators, spectrometers, saccharimeters, refractometer, level tester, photometer, focometer, dynameter, cathetometer and cameras, a Newton lantern for microscopic projection in ordinary and polarized light, and a Thompson lantern for projection by transmission and reflection.

The Hydrostatic laboratory contains a supply of various forms of hydrometers, hydrostatic balances, Jolly balance, Mohr's balance, vacuum pumps, gauges, etc.

The Heat laboratory is equipped with a full supply of calorimeters and accessories for determinations of latent and specific heat. There is also a steam boiler and jacketed tubes for deter-

minations of the expansion of metal rods, air thermometer, apparatus for verification of Boyle's law and pressure and boiling point curve and for determination of the absolute expansion of mercury, Nichol's modification of Rowland's calorimeter for determination of Mechanical Equivalent of heat, the work being supplied by an electric motor.

The Acoustical laboratory is provided with sonometer, siren, forks ordinary and electric, Lissajons' and Melde's apparatus, organ pipes of various forms, manometric flame apparatus and a special equipment for work in architectural acoustics consisting of torsion chronograph, electro-pneumatic wind chest and standardized organ pipes and other accessories.

CHEMICAL LABORATORIES.

The Chemical laboratories are situated in the western half of the new Chemistry and Mining building, on the first and second floors. The rooms are large and well lighted, and are supplied with the usual modern equipment.

The first and second year laboratory for qualitative work has accommodation for 112 students, each working space being supplied with water, gas and fume cupboard. The third and fourth year laboratory for quantitative analysis will accommodate 36 students, and is supplied with commodious fume cupboards and all necessary apparatus. A laboratory with working places for 24 is provided for the students engaged in the study of technical chemistry; it is equipped with appliances for the preparation and testing of chemical products. Each of these laboratories has its own balance room adjoining, furnished with instruments from the best makers and adapted to the particular objects in view.

In addition there are rooms set apart for gas analysis, electrolytic analysis, calorimetry, and a specially constructed fireproof laboratory for combustion, crucible and bomb furnaces. Each of these laboratories is supplied with apparatus of the most approved design, providing excellent facilities for the prosecution of work in analytical and technical chemistry.

MUSEUMS.

The Geological Museum includes collections of minerals, rocks and fossils. There is a large general collection of minerals classified in the usual manner, and intended for comparison and reference in advanced classes; but special attention is paid to the extensive collection of Ontario minerals, which, with few exceptions, contains all the specimens known in the Province, and is particularly rich in examples of economic minerals. The Ontario collection is constantly being added to, and is believed to be as complete as any in the Dominion.

Adjoining the mineral collection is a series of ores of all descriptions. Particular prominence is given to the gold and silver ores of Canada, especially the Ontario gold ores.

The rocks also are arranged in two collections, one a large general collection from foreign localities, containing massive schistose and sedimentary rocks; the other, a set of Canadian rocks, especially complete in typical country rocks from important ore deposits. An extensive set of thin sections enables advanced students to study both rock collections microscopically.

The palæontological collection consists of fossils and casts, including the chief typical forms needed for determining the age of sedimentary rocks.

A number of wall cases have been prepared for a collection of specimens illustrating industrial chemistry, and a beginning made towards arranging the materials on hand.

In a separate room there is an interesting collection of dressed building and ornamental stones from various parts of Ontario, serving as illustrations in the architectural department.

LIBRARY.

The library is supplied with a number of the more important scientific and technical periodicals. A valuable collection of works of reference in the subjects of study pursued in the School has been formed and is being added to year by year.

List of Donors to the Library.

American Society of Civil Engineers—Proceedings.

Association of Engineering Societies—Journal.

Blackwood, A. E.—Stone.

Bureau of Mines—Report.

Canadian Mining Institute—Journal.

Columbia University—Quarterly.

Department of Mines, Nova Scotia—Report.

Geological Survey of Canada—Report.

Gzowski, Estate of the late Sir Casimir—

Transactions of American Society of Civil Engineers,
1874-1898.

Transactions of Canadian Society of Civil Engineers, vol.
I., 1877—vol. XII., 1898.

Proceedings of the Institution of Civil Engineers, vol.
LXIII., 1880—vol. CXXXII., 1898.

Institution of Engineers and Shipbuilders in Scotland—Transac-
tions.

Institution of Junior Engineers—Transactions.

Institution of Mechanical Engineers—Proceedings.

Royal Institute of British Architects—Journal and Proceedings.

Society of Chemical Industry—Journal.

Societe des Ingenieurs Civils de France—Memoires.

United States Coast and Geodetic Survey—Report.

United States Government Tests of Metals, etc.—Report.

University of Toronto—Studies.

SOCIETIES.

THE ENGINEERING SOCIETY OF THE SCHOOL OF PRACTICAL SCIENCE.

Officers for 1906-07.

President	K. A. McKenzie.
Vice-President	D. J. McGugan.
Recording Secretary	E. M. Dann.
Treasurer	G. E. Quance.
Corresponding Secretary	A. E. Jupp.
Editor	P Gillespie, B.A.Sc.
Librarian	E. G. Hewson.
Assistant Librarian	S. A. Marshall.
Graudates' Representative	A. Latornell.
Fourth Year Representative	D. G. Park.
Third Year Representative	J. L. Rannie.
Second Year Representative	A. W. J. Stewart.
First Year Representative	To be elected.

The Society meets every second Wednesday during the Academic year. Papers are read, and discussions are held on engineering subjects. The Society publishes a pamphlet annually, containing the best papers read at the meetings.

SCHOOL OF PRACTICAL SCIENCE ATHLETIC ASSOCIATION.

Executive Committee 1905-06.

Honorary President	Principal Galbraith.
President	J. M. MacInnes.
Vice-President	H. C. Ritchie.
Secretary-Treasurer	W. D. McKenzie.
Fourth Year Representative	C. H. Shirriff.
Third Year Representative	K. B. Ross.
Second Year Representative	E. W. Murray.
First Year Representative	G. R. Workman.

The athletic association is the ruling body in School athletics, and has full control over all athletic clubs using the School name. The Executive Committee has power to suspend any one from the privileges of membership in the association for any breach of its regulations, and controls the finances of all athletic clubs in the School. The annual membership fee of this association is fifty cents.

No other monies are collected for the support of athletics in the School without the sanction of the Executive Committee.

RUGBY FOOTBALL.

The Mulock Cup, which was presented by Hon. Wm. Mulock, M.A., LL.D., to the University of Toronto Rugby Football Club for inter-college competition, brings out each year a large number of contestants from the University and affiliated colleges.

RUGBY FOOTBALL CLUB OF THE SCHOOL OF PRACTICAL SCIENCE (Winners of Mulock Cup).

Officers.

Honorary President	Principal Galbraith.
President	A. E. K. Bunnell.
Vice-President	W. G. Hewson.
Secretary-Treasurer	K. B. Ross.
Manager of senior team	F. W. Broadfoot.
Captain of senior team	F. A. McGiverin.
Manager of junior team	J. Newton.
Captain of junior team	

ASSOCIATION FOOTBALL.

In order to encourage Association Football on the College campus, the Faculty of the University of Toronto presented a cup, known as the Faculty Cup, to the Inter-College Association Football Club for annual competition among University and affiliated colleges.

ASSOCIATION FOOTBALL CLUB OF THE SCHOOL OF PRACTICAL
SCIENCE (Winners of Faculty Cup).

Officers.

Honorary President	Prof. C. H. C. Wright.
President	A. L. McLean.
Secretary-Treasurer	E. W. Murray.
Manager of seniors	W. C. Jepson.
Manager of juniors	E. M. Wood.
Captain of seniors	W. C. Blackwood.
Captain of juniors	H. F. Shearer.

HOCKEY.

The trophy which is competed for annually among the Colleges in hockey is known as the Jennings Cup, and is the gift of W. T. Jennings, Mem., Inst. C. E., Consulting Engineer, Toronto.

HOCKEY CLUB OF THE SCHOOL OF PRACTICAL SCIENCE.

Officers.

Honorary President	Professor Ellis.
President	W. G. Swan.
Vice-President	E. W. Murray.
Secretary-Treasurer	E. S. G. Strathy.
Manager of senior team	C. W. Hookway.
Manager of junior team	W. E. Janney.

TRACK CLUB.

Officers, 1905-1906.

President	L. W. Morden.
Vice-President	W. Barber.
Secretary-Treasurer	G. R. Workman.
Fourth Year Representative	T. R. Loudon.
Third Year Representative	P. W. Greene.
Second Year Representative	H. C. Ritchie.
First Year Representative	J. VanNostrand.

OFFICERS OF THE 2nd FIELD COMPANY CANADIAN ENGINEERS.

Major Commanding	W. R. Lang.
Lieut. (Acting Adj.)	H. N. Gzowski.
Lieutenant	S P. Biggs.
Lieutenant	C. S. L. Hertzberg.
Lieutenant	Emile von der Osten.
Lieutenant	H F. H. Hertzberg.
Company Sergt.-Major	J J. O'Sullivan.

UNIVERSITY OF TORONTO ATHLETIC ASSOCIATION.

Directorate.

(From the Calendar of the University of Toronto.)

President.....	President Loudon.
Vice-President	F. W. Baldwin.
Secretary-Treasurer	W. G. Woods, D.D.S.

The athletic association is now the paramount body in University athletics, and has entire jurisdiction over the athletic clubs using the University name, and over their finances, members, and policy, subject to the University authorities. Henceforth no financial agreement can be entered into by any such club without the sanction of the Directorate. No expenditure of any kind in connection with any such club can be made without the written order of the Secretary-Treasurer of the Directorate.

GYMNASIUM AND ATHLETIC GROUNDS.

(From the Calendar of the University of Toronto.)

"The University gymnasium was completed and equipped in 1893. It is fully provided with the best and most modern appliances for physical culture, and contains a running track, shower baths and swimming bath, besides the necessary dressing rooms and other conveniences. A competent instructor in gymnastics is in constant attendance to superintend and direct the

exercises of students. In addition to the lawn in front of the Main University Building and a campus in the rear, a large plot of ground on Devonshire Place has been set apart as an athletic field. By this addition the facilities for football, cricket, tennis and other out-door athletic sports are doubled, as compared with previous accommodation; and by these grounds, in conjunction with the gymnasium, ample opportunity is afforded to all students for healthful exercise and physical development. To assist in meeting the expenses of the gymnasium, a nominal annual fee is imposed on those who avail themselves of its advantages. The supervision of all athletic matters has been entrusted by the Councils to an Athletic Board, consisting of six members appointed from the Faculty and officers of the Athletic Association. All applications of clubs for the use of grounds must be made annually to this Board. All such applications must be accompanied by a list of officers. In the case of new clubs the list of officers must be accompanied by particulars as to the organization and objects of the club making application."

STUDENTS' UNION BUILDING.

(From the Calendar of the University of Toronto.)

"In 1894 additions were made to the front of the building in which the gymnasium is situated, consisting of a large hall for public meetings, a reading room and committee rooms. This additional accommodation is available for the work of the various student societies, and for academic purposes. Applications for the use of rooms, accompanied by a list of officers and a copy of the constitution of the society making application, must be made, through the President, to the joint committee of the Councils on Gymnasium and Students' Union Building, at the beginning of the season, or from time to time as occasion requires. Arrangements have also been made by which recognized societies may obtain the use of committee rooms on application to the janitor of the Students' Union Building."

SESSION 1905-1906.

STUDENTS IN ATTENDANCE.

FIRST YEAR.

Regular Students.

3	Adams, O. F.	Toronto.
3	Agnew, J. N.	Stratford.
3	Allan, L.	Brockville.
1	Allison, C. B.	South Woodslee.
1	Anderson, R. M.	Burlington.
3	Annis, S. E.	Scarboro.
5	Arens, R.	Orillia.
3	Armstrong, H. V.	Trenton.
3	Bain, W. G.	Woodstock.
3	Barber, H. C.	Toronto.
1	Bartlett, E.	Smithville.
3	Beaven, W. J.	Hespeler.
2	Bedford, F. J.	Allandale.
3	Beith, R. E.	Toronto.
1	Berry, B. C.	Toronto.
1	Bevan, T. H. H.	Niagara Falls.
5	Birchard, C. C.	Coboconk.
3	Bitzer, A. M.	Berlin.
3	Black, G. E.	Stratford.
3	Bowes, A. B.	Toronto.
3	Bowes, H. F.	Toronto.
3	Brace, J. H.	Brockville.
1	Brecken, P. R.	Toronto.
3	Brown, C. E.	Meaford.
3	Brown, E. I.	Paris.
1	Bryce, W. F. M.	Toronto.
3	Buchan, P. H.	Vancouver, B. C.
3	Calvert, D. G.	Strathroy.
2	Cameron, E. P.	Alliston.
1	Cameron, D.	Marmora.
3	Campbell, N. A.	Toronto.
1	Campbell, N. H.	Toronto Junction.

- | | |
|--------------------------------------|---|
| 1. Civil Engineering. | 3. Mechanical and Electrical Engineering. |
| 2. Mining Engineering. | 4. Architecture. |
| 5. Analytical and Applied Chemistry. | 6. Chemical Engineering. |

FIRST YEAR.—*Continued.*

2	Campbell, J. E.	Ivan.
1	Carrie, K. N.	Toronto.
3	Challen, G.	Hamilton.
3	Clarke, F. W.	Toronto.
3	Clarkson, E. G.	Toronto.
3	Cockburn, R. B.	Hamilton.
1	Cole, W. E.	Lucasville.
4	Collett, W. C.	Toronto.
1	Collinson, J. G.	St. Thomas.
3	Colvin, C. W.	Galt.
5	Corrigan, O. S.	Toronto.
3	Coyne, J. H.	St. Thomas.
2	Cruikshank, A. M.	Weston.
2	Cumming, J. D.	Toronto.
6	Dahl, A. D.	Dutton.
1	Danks, F. A.	Toronto.
1	Dann, E. M.	London.
3	Darroch, J.	Gillies Hill.
1	Davis, H. C.	Freeman.
3	Delahaye, W. H.	Pembroke.
3	Dissette, A. C.	Toronto.
3	Douglas, R. H.	Banff, Alta.
1	Duff, M. O.	Hamilton.
1	Eagleson, F. M.	Wroxeter.
1	Edwards, C.	Toronto.
4	Ellis, H. C.	Toronto Junction.
1	Ellis, L. M.	Toronto Junction.
1	Evans, S. L.	Corinth.
1	Ewing, E. O.	Toronto.
1	Flannagan, O. L.	Gore Bay.
1	Foord, R. J.	Toronto.
2	Frid, H. P.	Hamilton.
3	Gear, S. S.	Fort Erie.
1	Glover, A. E.	Beaverton.
1	Grady, J. E.	Macleod, Alta.
1	Graham, J. J.	Derry West.
1	Grassie, C. A.	Smithville.
2	Griffith, T.	Toronto Junction.
3	Gulley, C. L.	Uxbridge.
3	Hackner, J. W.	Sandford.
1	Harcourt, R. M.	Toronto.
5	Harris, F. K.	Toronto.

STUDENTS IN ATTENDANCE.

FIRST YEAR.—*Continued.*

3	Haviland, F. L.	West Lorne.
3	Heintzman, T. H.	Toronto Junction.
1	Henderson, C. D.	Toronto.
1	Hogarth, G.	Toronto.
3	Holcroft, K. M.	Ingersoll.
4	Holton, G. H.	Belleville.
1	Hopkins, C. H.	Lindsay.
1	Huether, A. D.	Wiarton.
5	Huether, D. J.	Neustadt.
3	Hunter, A. N.	Toronto.
3	Iler, S. B.	Belleville.
1	Jack, R. T. G.	Toronto.
3	Janney, W. E.	Galt.
5	Jelfs, F. C.	Hamilton.
3	Johnston, J. T.	Kincardine.
1	Kean, D. J.	Gamebridge.
1	Keffer, A. H. E.	Maple.
1	Keys, W. R.	Winchester.
3	Killip, W. C.	Picton.
3	Lawrence, J. B.	Dresden.
3	Leslie, J. N. M.	Elcra.
3	Lewis, F. C.	Ingersoll.
1	Macdonald, R. D.	Goderich.
1	Macpherson, G. A.	Niagara Falls South.
2	McCullough, F. H.	Port Colborne.
2	McDonald, M. P.	Toronto.
3	McEachren, F. Y. P.	Toronto.
1	McGeorge, W. G.	Chatham.
3	McKnight, J. H.	Simcoe.
3	McLeod, G.	Armow.
1	McMaster, W. A. A.	Palmerston.
1	McMordie, H. C.	London.
1	McRoberts, A. A.	Pontypool.
5	Madge, N. G.	Farquhar.
5	Marlatt, K. D.	Oakville.
2	Marshall, H. J.	London.
1	Marshall, R. J.	Toronto.
1	Miller, D. J.	Orillia.
4	Molesworth, J. C. P.	Toronto.
3	Monk, E. D.	Cornwall.
3	Moody, F. H.	Toronto.
3	Morgan, G. M.	Lambton Mills.

FIRST YEAR.—*Continued.*

3	Morice, J. H.	Niagara Falls.
3	Mowbray, F. E. H.	Kinsale.
3	Murray, S.	Goderich.
5	Nasmith, M. E.	Toronto.
3	Nelson, H. M.	Ottawa.
1	Newton, J.	Sarnia.
3	O'Donnell, V. J.	Merrickville.
3	O'Hearn, J. J.	Toronto.
3	O'Keefe, H. J.	Chatham.
3	Oxley, A. C.	Toronto.
1	Pae, A. W.	Barrie.
1	Patterson, E. B.	Toronto.
5	Pattinson, F. H.	Preston.
2	Paulin, J. C.	Arthur.
3	Pearson, C. L.	Toronto.
1	Peckover, H. J.	Sunderland.
1	Pequegnat, M.	Berlin.
1	Phillips, F. F.	Seaforth.
1	Pigott, R. B.	Hamilton.
3	Pivnick, M.	Toronto.
2	Ponton, G. M.	Belleville.
1	Proctor, E. M.	Sarnia.
3	Ransom, J. P.	Toronto.
1	Redfern, W. B.	Owen Sound.
3	Reesor, N. H.	Cedar Grove.
1	Richardson, F. L.	Maple.
3	Ricker, H. A.	Dunnville.
2	Rigg, D.	Wellandport.
1	Robertson, A. R.	Glencoe.
3	Robertson, C. P.	Hamilton.
3	Robinson, R. C.	Winnipeg, Man.
5	Rogers, L. J.	Oshawa.
1	Rose, B.	Van Camp
2	Rose, R. R.	Guelph.
3	Ross, D.	London.
5	Rothwell, W. E.	Toronto.
1	Sanderson, A. U.	Toronto.
1	Scott, H. R.	Pembroke.
1	Secord, A. O.	Brantford.
3	Spence, J. J.	Toronto.
1	Stamford, W. L.	Dundas.
3	Starr, R. H.	Toronto.

STUDENTS IN ATTENDANCE.

FIRST YEAR.—*Continued.*

3	Stayner, D. F.	Toronto
3	Stewart, A. W. J.	Bunyan.
3	St. Lawrence, J.	London.
3	Stock, J. J.	Stratford.
1	Stock, P. H.	Toronto.
1	Stuart, H. B.	Mitchell.
1	Sutherland, D.	Toronto.
3	Sword, A. D.	Toronto.
3	Taylor, J. W. R.	Keene.
1	Taylor, W. E.	Massie.
3	Thomas, V. C.	Toronto.
6	Thomson, C. G.	Orillia.
1	Thornley, H.	London.
1	Tipper, G. A.	Brantford.
3	Van Norman, C.	Toronto.
1	Villeneuve, T. L.	St. Alphonse, P. Q.
1	Walker, J. A.	Guelph.
2	Wallace, J. L.	Hamilton.
3	Waugh, B.	Seaforth.
3	Webster, W. J. C.	Oakwood.
1	West, A. M.	Hespeler.
3	Wilson, F. D.	Toronto.
3	Wilson, F. F.	Harriston.
1	Wing, D. O.	Berlin.
1	Workman, G. R.	Tillsonburg.
3	Young, R.	Almonte.
3	Young, F. L.	DeCewsville.

Non-Regular Students Taking Full Course.

1	Barnett, H. A.	Toronto.
3	Bell, G. G.	Toronto.
1	Buchanan, J. A.	Comber.
3	Cepeda, M.	Tunja, Col. S. A.
1	Clarke, H. S.	Toronto.
3	Cleary, F. S.	Windsor.
3	Fetherstonhaugh, J. E.	Mimico.
2	Foreman, J. M.	Lucan.
1	Foster, A. H.	Guelph.
1	Gammel, H. W. R.	Selkirk, Man.
3	Gillies, A. R.	Toronto.
3	Hall, R. H.	Peterboro.
1	James, E. W.	Portage la Prairie.

FIRST YEAR.—*Concluded.*

1	Jardine, W. S.	Omamee.
1	Kennedy, H. G.	Ottawa.
1	Kortright, F. H.	St. Kitts, B. W. I.
3	Kyle, N. H.	Warton.
1	Lee, F. A.	Springfield, Mass.
1	Lloyd, N. C. A.	Schomberg.
3	Lynar, H. R.	Toronto.
3	McCracken, J. F.	Brussels.
3	Malone, J. E.	Brechin.
1	Michaud, J. A.	Toronto.
3	Milling, H. F.	Indian Head.
1	Mitchell, A. B.	Toronto.
3	Nicholls, N. C.	Toronto.
3	O'Grady, W. deC.	Toronto.
1	Oke, W. V.	Toronto.
2	Palmer, E. P. B.	Mexico, Mexico.
1	Peters, F. M.	Fort Saskatchewan, Alta
1	Phelps, G. D.	Deer Park.
1	Pollard, S. B.	Petrolia.
3	Proctor, A. I.	Hamilton.
3	Publow, C. F.	Pilot Mound, Man.
3	Saylor, S. A.	Bloomfield.
3	Sellers, S. G.	Toronto.
3	Shaw, W. E. V.	Sidney, N. S. W.
3	Squire, G. E.	Mitchell.
3	Sylvester, K. B.	Lindsay.
1	Underwood, J. E.	Lakelet.
1	VanNostrand, J.	Toronto.
3	Wedlake, R. M.	Brantford.
2	Weir, R. P.	Toronto.
1	White, E. V. H.	Burlington.
3	White, W. J.	Trafalgar, W. A.
2	Williams, J. A. M.	Toronto.

SECOND YEAR.

3	Adams, G. H. F.	Victoria, B. C.
3	Akers, H. G.	Toronto.
3	Allen, F. G.	Erie, Pa.
1	Anderson, F. J.	Niagara Falls.
3	Anderson, J. E.	Lindsay.
1	Augustine, A. P.	Arkona.
3	Bothwell, C. C.	Barrie.
3	Bowman, H. D.	London.
1	Broughton, G. H.	Paris.
1	Brown, J. A.	Sarnia.
1	Bruce, W. J.	Toronto.
1	Bush, C. E.	Toronto.
3	Campbell, G. A.	Milbrook.
3	Carroll, A. M.	Richmond Hill.
3	Caster, J. H.	North Claremont.
1	Cavell, E.	Owen Sound.
1	Chesnut, F. H.	Toronto.
3	Clendening, C. S.	Walkerton.
3	Clendening, C. A.	Toronto.
5	Coleman, R. M.	Toronto.
3	Connell, C. B. B.	St. Kitts, B. W. I.
1	Copeland, M.	Emerson, Man.
1	Cory, R. Y.	Toronto.
3	Coulter, G. P.	Buffalo, N. Y.
1	Cowper, G. C.	Welland.
3	Crawford, A.	Fernhill.
2	Culbert, J. V.	London.
6	Cummer, H. H.	Hamilton.
3	Dawson, G. A.	Mount Forest.
4	Downey, F. C.	Toronto.
3	Evans, S. D.	Leamington.
3	Ewart, F. R.	Toronto.
3	File, E. S.	Napanee.
1	Fleming, G. R. S.	Toronto.
1	Flint, C.	Toronto.
1	Foster, W. J.	Windsor.
3	Francis, G. C.	Verschoyle.
3	Fraser, R. D.	Pilot Mound, Man.
6	Fux, P. C.	Brantford.
1	Galletly, J. S.	Davisville.
2	Galt, G.	Rcssland, B. C.
1	Garrow, A. B.	Toronto.

SECOND YEAR.—*Continued.*

2 Gibson, R. J.	Bradford.
1 Gillies, A.	St. Thomas.
3 Gordon, J. M.	Toronto.
1 Graham, G. W.	Eugenia.
3 Grasett, C. S.	Barrie.
1 Greene, W. H.	Toronto.
1 Hagerty, R. E. W.	Toronto.
3 Hall, K.	Penetanguishene.
1 Hamilton, C. T.	Windsor.
1 Hara, F. J.	Merritton.
3 Hare, R. A.	St. Catharines.
1 Hertzberg, H. F. H.	Toronto.
1 Hewson, E. G.	Toronto.
3 Hill, H. O.	Toronto.
1 Hogg, T. H.	Chippewa.
1 Holmes, O. B.	Selkirk.
3 Hutton, C. H.	Hamilton.
3 Hyman, E. W.	London.
1 Hyland, H. M.	Toronto.
3 Ireland, L. G.	Toronto.
1 Jackson, W.	Ridgeway.
4 Jackson, C. E.	Petrolia.
2 Johnson, H. A.	Hamilton.
3 Kay, E. W.	Paris.
3 Keith, D. F.	Toronto.
3 King, W. S.	Guelph.
1 Kinghorn, A. A.	Toronto.
1 Klingner, L. W.	Toronto.
1 Lamb, F. C.	Walkerton.
3 LePan, A. D.	Owen Sound.
5 Lewis, R. G.	Toronto.
1 Lindsay, J. H.	Hornby.
3 McCully, K. C.	Deer Park.
3 McCurdy, J. A. D.	Toronto.
2 McGiverin, F. A.	Hamilton.
3 McGugan, D. J.	Ekfrid.
3 McIntosh, A. H.	Mosborough.
1 McKechnie, F. H.	Woodstock.
1 McLean, A. L.	Hensall.
1 MacLeod, G. W.	Parkhill.
3 McNeill, F. W.	Toronto.
3 McDonald, F. R.	Lindsay.

SECOND YEAR.—*Continued.*

1 Mackenzie, W. D.	Kirkfield.
3 Maguire, H. C.	St. Catharines.
1 Maher, W. R.	Eganville.
1 Malcolmson, W. S.	Toronto.
3 Marshall, S. A.	Snelgrove.
6 Mason, D. H. C.	Toronto.
3 Maynard, H. V.	Port Hope.
3 Meader, J. E.	Toronto.
1 Melson, J. W.	Toronto.
5 Milligan, G. L.	Brampton.
1 Mills, G. G.	Toronto.
3 Minns, J. B.	Toronto.
4 Molesworth, G. N.	Toronto.
1 Moore, J. M.	London.
5 Morley, P. F.	Berlin.
1 Munro, D. G.	Iona.
1 Murray, E. W.	Seaforth.
3 Murray, J. D.	Toronto.
3 Murray, W. P.	Fairview.
1 Neelands, E. W.	Fcrest.
1 Neelands, R. E. K.	Brampton.
2 Neilly, B.	Bradford.
1 Nourse, A. E.	Toronto.
3 O'Sullivan, J. J.	Toronto.
4 Page, F.	Toronto.
2 Paton, T. K.	Merritton.
1 Paulin, F. W.	Toronto.
3 Percy, H. A.	Alvinston.
1 Phillips, H. G.	Minden.
1 Pierce, J. W.	Quyon.
1 Potter, R. B.	Lieury.
3 Prochnow, F. E.	Wilmington, Del
3 Procunier, J. F.	Bayham.
3 Qua, A. H.	Paris.
3 Quance, G. E.	Delhi.
3 Raine, H.	Orton.
1 Rannie, J. L.	Newmarket.
3 Richardson, A. B.	Walkerton.
3 Richardson, C. W. B.	Wiaraton.
1 Ridler, A. A.	Toronto.
1 Ritchie, H. C.	Elmvale.
5 Robertson, F. A.	Toronto.

SECOND YEAR.—*Concluded.*

2	Ronald, C. S.	Meaford.
5	Rothwell, H. E.	Toronto.
5	Scholfield, C. A.	Dunnville.
1	Scott, C. A.	Toronto.
3	Shearer, H. F.	Vittoria.
1	Sheppard, A. C. T.	Britannia Bay.
1	Siegner, W. A.	Tavistock.
3	Smithrim, E. R.	Cairngorm.
1	Snaith, W.	Quebec.
3	Spencer, A. C.	London.
3	Stewart, G. S.	Strathroy.
1	Stiles, J. A.	London.
3	Stiver, J. L.	Mount Albert.
1	Strathy, E. S. G.	Toronto.
1	Stuart, J. L. G.	Toronto.
1	Summers, G. F.	Winchester.
1	Sutcliffe, H. W.	Forest.
1	Taylor, W. C.	Hamilton.
1	Thompson, P. M.	Picton.
3	Thomson, O. R.	Blenheim.
3	Toms, C. G.	Toronto.
1	Tye, H. W.	Stratford.
1	Walker, W. J.	Toronto.
1	White, W. R.	Drayton.
1	Wilkes, E. D.	Brantford.
1	Wilkie, W. M.	Toronto.
1	Williams, D.	Lindsay.
3	Wilson, A. F.	Toronto.
1	Wilson, J. M.	Toronto.
3	Woods, M. H.	Aylmer.
3	Wright, H. G.	Toronto.
1	Wright, G. W. A.	Toronto.
3	Young, J.	Chesley.

THIRD YEAR.

1 Alport, F.	Orillia.
3 Amos, W. L.	Guelph.
1 Arens, A. H.	Orillia.
3 Armer, J. C.	Chesley.
1 Baker, M. H.	St. Thomas.
3 Baldwin, F. W.	Toronto.
2 Banting, E. W.	Toronto.
3 Barber, F.	Toronto.
2 Bates, M.	Chatham.
2 Bellisle, J. P.	Toronto.
3 Betts, H. H.	London.
5 Beynon, D. E.	Toronto.
2 Bissett, G. W.	Kincardine.
3 Blackwood, W. C.	Toronto.
3 Brady, W. S.	Toronto.
3 Brandon, H. E.	Toronto.
1 Brian, M. E.	Windsor.
2 Broadfoot, F. C.	Seaforth.
2 Brown, T. W.	Alberton.
3 Byam, F. M.	Toronto.
1 Bunnell, A. E. K.	Brantford.
3 Cameron, A.	Marmora.
3 Campbell, A. W.	Melita, Man.
1 Carroll, M. J.	Baltimore.
3 Chadwick, R. E. C.	Toronto.
1 Christie, F.	Manchester.
1 Clark, G. T.	Campbellford.
3 Colhoun, G. A.	Alvinston.
1 Cook, W. A. M.	Toronto.
1 Cousins, E. L.	Toronto.
4 Creighton, A. G.	Dartmouth, N. S.
4 Daniels, W. N.	Norristown, Pa.
3 Death, N. P. F.	Dixie.
3 Dundass, C. S.	Putnam.
2 Evans, H. W.	Toronto.
3 Fear, S. L.	Amherstburg.
5 Forward, C. C.	Iroquois.
5 Graham, C. W.	Bradford.
3 Gray, J.	Port Credit.
1 Greene, P. W.	Orillia.
3 Hamilton, C. B.	Toronto.
1 Harkness, A. L.	Iroquois.

THIRD YEAR.—*Continued.*

1 Harris, R. C.	Hebron, N. S.
1 Harrison, R. L.	Grimsby.
1 Harrison, E.	Belleville.
3 Hartney, J. C.	Toronto.
1 Hett, S.	Sutton West.
3 Hillis, C. R.	Watford.
3 Hookway, C. W.	London.
3 Hopkins, R. H.	Lindsay.
1 Houston, R. S.	Emerson, Man.
2 Huber, W.	Bracebridge.
3 Hull, A. H.	Hamilton.
3 Jepson, W. C.	Niagara Falls.
1 Johnston, C.	Mildmay.
1 Jones, G. R.	Brantford.
3 Jones, T.	Toronto.
1 Jupp, A. E.	Toronto.
1 Keith, H. P.	Comber.
3 Keppy, J. D.	Spence.
2 Lamb, G. J.	Walkerton.
1 Lang, J. L.	Toronto.
3 Linton, A. P.	Galt.
4 McConnell, A. W.	Walkerton.
1 McGregor, J. M.	Ridgetown.
3 McIlwraith, D. G.	Galt.
2 McKenzie, J. A.	Kincardine.
1 McNab, J. V.	Ayr.
3 McPherson, J. A.	Bolsover.
2 Mackenzie, K. A.	Toronto.
1 MacKinnon, W.	Woodbridge.
1 MacInnes, J. M.	Ripley.
3 MacLachlan, W.	Toronto.
3 Marrs, D. W.	Beamsville.
3 Maxwell, W. A.	Windsor.
1 Menzies, J. M.	Staples.
3 Miller, L. R.	Orillia.
1 Mitchell, B. F.	Hamilton.
1 Montague, F. F.	Hamilton.
1 Moore, W. J.	North Gower.
1 Murdock, C. R.	Brampton.
2 Murphy, C. J.	St. Catharines.
1 Near, W. P.	St. Mary's.
2 Neelands, R.	Hamiota, Man.

THIRD YEAR.—*Concluded.*

3	Park, D. G.	Chatham.
3	Paterson, G. W.	Belton.
3	Pennington, C. H. L.	London.
5	Pettingill, R. E.	Rose Hall.
2	Purser, R. C.	Windsor.
3	Robertson, N. R.	Walkerton.
1	Roddick, J. O.	Brantford.
1	Rogers, C. H.	Peterboro.
2	Rolfson, O.	Walkerville.
1	Ross, R. C.	Port Robinson.
1	Ross, K. G.	Toronto.
1	Routly, H. T.	Lindsay.
2	Ryckman, J. H.	Fruitland.
3	Sanders, W. K.	St. Thomas.
1	Scott, W. A.	Galt.
3	Sewell, R. L.	Toronto.
1	Stewart, W. M.	Hamilton.
2	Thomson, J. E.	Toronto.
3	Vickery, C. L.	Port Perry.
1	Webster, W. G.	Oakwood.
5	Wickett, W. E.	Toronto.
3	Wilson, J. N.	Shanly.
3	Wood, E. M.	Sweaburg.
3	Zimmer, A. R.	Brussels.

1106 115

FOURTH YEAR.

1 Barber, W.	Toronto.
2 Begg, W. A.	West Flamboro.
3 Burnham, F. W.	Toronto.
2 Campbell, W. C.	Keene.
1 Crosby, N. L.	Hebron, N. S.
1 Ferguson, G. H.	Toronto.
3 Fierheller, H. S.	Toronto.
3 Gray, A.	Port Credit.
3 Harris, C. J.	Brantford.
1 Heron, J. B.	Toronto.
2 Hertzberg, C. S. L.	Toronto Junction.
3 Hewson, W. G.	Niagara Falls.
3 Kribs, G.	Hespeler.
5 Lancaster, H. M.	Burgessville.
1 Latornel, A.	Meaford.
1 Latornell, A. J.	Meaford.
1 Loudon, T. R.	Toronto.
3 Moffatt, R. W.	Bognor.
3 Munro, G. R.	Peterboro.
3 Pardoe, W. S.	Toronto.
1 Phillips, E. P. A.	Toronto.
2 Ramsay, G. L.	Dunnville.
1 Reid, F. B.	Bowmanville.
3 Riddell, M. R.	Toronto.
5 Rothwell, T. E.	Gilford.
3 Shirriff, C. H.	Niagara Falls South.
3 Slater, F. W.	Toronto.
1 Swan, W. G.	Kincardine.
3 Thomson, L. R.	Toronto.
1 Traill, J. J.	Toronto.
3 Turner, W. E.	Saskatoon, Sask.
3 Vaughan, J.	Toronto.
1 Wagner, H. L.	Toronto.
3 Watson, J. P.	Acacia.
1 Wells, A. F.	Sandwich.

ART STUDENTS TAKING INSTRUCTION IN APPLIED CHEMISTRY,
ASSAYING, SURVEYING AND DRAWING.

Allen, T. B.	Toronto.
Baker, H. A. G.	Oshawa.
Batten, J. W.	Essex.
Bowles, O.	Randolph.
Bowman, F. C.	London.
Boyd, A. M.	Toronto.
Daly, R. A.	Napanee.
Flock, F. A.	Woodburn.
McRae, K. J.	Toronto.
MacKey, J. F.	Toronto.
Manning, R. J.	Toronto.
Sternberg, F.	Toronto.
Stuart, A.	
Wilson, M. E.	Paris.

PRIZEMEN.

Engineering.

1879.	I.	Year	J. McAree	1st Prize.
1880.	II.	"	J. L. Morris	1st "
1881.	I	"	G. H. Duggan	1st "
	II	"	D. Jeffrey	1st "
1882.	I.	"	A. R. Raymer	1st "
	I.	"	E. W. Stern	2nd "
	II.	"	G. H. Duggan	1st "
	III.	"	D. Jeffrey	1st "
1883.	I.	"	B. A. Ludgate	1st "
	I.	"	A. M. Bowman	2nd "
	II.	"	A. R. Raymer	1st "
	II.	"	E. W. Stern	2nd "
	III.	"	G. H. Duggan	1st "
1884.	II.	"	B. A. Ludgate	1st "
	III.	"	E. W. Stern	2nd "
	III.	"	A. R. Raymer	2nd "
1885.	I.	"	A. E. Lott	1st "
	I.	"	J. Rogers	2nd "
	II.	"	T. K. Thomson	1st "
	III.	"	B. A. Ludgate	1st "
1886.	I.	"	C. H. C. Wright	1st "
	I.	"	J. E. Ross	2nd "
	II.	"	A. E. Lott	1st "
1887.	I.	"	H. E. T. Haultain	1st "
	II.	"	C. H. C. Wright	1st "
	III.	"	A. E. Lott	1st "
	III.	"	J. Rogers	2nd "
1888.	I.	"	E. B. Merrill	1st "
	I.	"	F. M. Bowman	2nd "
	II.	"	D. D. James	1st "
	III.	"	C. H. C. Wright	1st "
1889.	I.	"	J. K. Robinson	1st "
	I.	"	G. E. Silvester	2nd "
	II.	"	E. B. Merrill	1st "
	II.	"	F. M. Bowman	2nd "
	III.	"	D. D. James	1st "
1890	I.	"	C. Fairchild	1st "
	II.	"	J. K. Robinson	1st "
	III.	"	F. M. Bowman	1st "
	III.	"	E. B. Merrill	2nd "

PRIZEMEN.—*Continued.*

1891.	I. Year	A. J. McPherson	1st Prize.
	I. “	R. B. Watson	2nd “
	II. “	J. B. Goodwin	1st “
	III. “	G. E. Silvester	1st “
	III. “	C. W. Dill	2nd “
1892.	I. “	A. E. Bergey	1st “
	I. “	R. W. Angus	2nd “
	II. “	A. J. McPherson	1st “
	II. “	R. B. Watson	2nd “
	III. “	E. J. Laschinger	1st “
	III. “	C. Fairchild	2nd “

The Grant of prizes was withdrawn at the close of 1892.

Architecture.

The prize in Architecture was the gift of Mr. D. B. Dick, Architect, Toronto.

1891.	I. Year	H. F. Ballantyne.
1892.	I. “	J. A. Ewart.
1893.	I. “	A. H. Harkness.
1894.	I. “	E. A. Forward.
1895.	I. “	W. F. Scott.
1896.	I. “	D. Macintosh.
1899.	I. “	W. F. Shepherd.

Prizes are awarded for general proficiency in the subjects of the Third Year.

Civil Engineering.

Date.	Name.	Donor.
1897.	M. B. Weekes	T. Kennard Thomson, C.E.
1898.	J. A. Stewart	“
1899.	T. Shanks	“
1900.	E. H. Phillips	“
1901.	H. P. Rust	“
1902.	W. F. Ratz	“
1903.	C. R. Young	“
1904.	W. N. Moorhouse	“
1905.	W. Barber	“
1905.	N. L. Crosby	Noel Marshall, Esq.

Mining Engineering.

1905.	G. S. Scott	Hon. W. H. Montague, M.D.
1905.	W. A. Begg	“

Mechanical Engineering.

1905. W. G. Nicklin Standard Silver Co.

Electrical Engineering.

1905. C. E. Sisson Noel Marshall, Esq.

Mechanical and Electrical Engineering.

1897. A. T. Gray F. A. Riehle, Esq.

1898. F. C. Smallpiece “

1905. C. B. Aylsworth Standard Silver Co.

UNIVERSITY OF TORONTO.

Degree of Bachelor of Applied Science.

Date of admission.	Name.	Date of admission.	Name.
1893.	Alison, T. H.	1903.*	Chadsey, S. B.
1897.*	Angus, R. W.	1898.	Charlton, H. W.
1904.*	Angus, H. H.	1894.*	Chewett, H. J.
1901.	Ardagh, E. G. R.	1903.*	Christie, W.
1896.	Armstrong, J.	1905.	Christie, U. W.
1897.*	Bain, J. W.	1905.*	Code, T. F.
1894.*	Ballantyne, H. F.	1905.	Crerar, S. R.
1901.	Barley, J. H.	1900.*	Chubbuck, L. B.
1902.	Barrett, R. H.	1902.	Cockburn, J. R.
1895.	Beauregard, A. T.	1900.	Coulthard, R. W.
1903.	Blair, W. J.	1903.*	Culbert, M. T.
1902.*	Boswell, M. C.	1901.	Craig, J. A.
1899.	Boyd, W. H.	1901.	Davison, J. E.
1902.	Brandon, E. T.	1905.	Davison, A. E.
1903.	Brereton, W. P.	1902.	DeCew, J. A.
1896.	Brodie, W. M.	1901.	Dickson, G. W.
1895.	Bucke, W. A.	1901.*	Dixon, H. A.
1900.	Burnside, J. T. M.	1896.	Dobie, J. S.
1905.	Burwash, N. A.	1902.*	Eason, D. E.
1905.	Campbell, A. J.	1904.	Edwards, W. M.
1905.	Campbell, A. M.	1897.*	Elliott, H. P.
1898.	Carpenter, H. S.	1903.	Empey, J. M.
1899.	Carter, W. E. H.	1895.*	Ewart, J. A.
1903.*	Chace, W. G.	1904.	Fensom, C. J.

*Degree with honours.

DEGREE OF BACHELOR OF APPLIED SCIENCE.—*Continued.*

Date of admission.	Name.	Date of admission.	Name.
1905.*	Ford, A. L.	1893.*	Laschinger, E. J.
1901.	Foreman, W. E.	1901.	Latham, R.
1904.*	Gaby, F. A.	1893.*	Lawson, W.
1903.*	Gagne, S.	1893.	Lea, W. A.
1904.	Gardner, J. C.	1894.	McAllister, A. L.
1903.*	Gibson, A. E.	1895.	McAllister, J. E.
1904.*	Gibson, N. R.	1893.	McAree, J.
1905.	Gibson, W. S.	1905.	McAuslan, H. J.
1904.*	Gillespie, P.	1904.	McBride, A. H.
1894.	Goodwin, J. B.	1905.	McCuaig, O. B.
1899.	Grant, W. F.	1893.	McEntee, B.
1898.	Gray, A. T.	1905.	McEwen, G. G.
1905.	Gray, W. W.	1904.	McFarlane, J. A.
1905.	Greenwood, W. K.	1905.*	McGibbon, C. P.
1901.	Guy, E.	1896.*	McGowan, J.
1897.*	Haight, H. V.	1905.	McKay, C. D.
1904.	Hamilton, J. F.	1896.*	McKinnon, H. L.
1905.	Hanes, G. S.	1903.	McMaster, A. T. C.
1900.	Hare, W. A.	1901.	McMillan, J. G.
1897.*	Harkness, A. H.	1894.*	McPherson, A. J.
1902.	Harvey, C.	1895.	McTaggart, A. L.
1901.	Hemphill, W.	1902.*	McVean, H. G.
1895.	Herald, W. H.	1897.	Macallum, A. F.
1901.	Holcroft, H. S.	1897.	Macbeth, C. W.
1896.	Hull, H. S.	1904.	Macintosh, D.
1894.	James, D. D.	1905.	Marriott, F. G.
1893.	James, O. S.	1897.	Martin, T.
1905.	James, E. A.	1903.*	Matheson, P.
1905.	Jermyn, P. V.	1894.*	Merrill, E. B.
1895.*	Job, H. E.	1893.	Milne, C. G.
1895.	Johnson, S. M.	1896.	Mines, W. H.
1902.	Johnson, J. A.	1895.*	Minty, W.
1896.	Johnson, A. C.	1894.	Mitchell, C. H.
1894.*	Keele, J.	1900.	Monds, W.
1903.	Knight, R. H.	1905.*	Montgomery, R. H.
1899.	Korman, J. S.	1901.	Neelands, E. V.
1894.	Laidlaw, J. T.	1904.	Nevitt, I. H.
1893.	Laing, A. T.	1904.	Oliver, E. W.
1903.	Langmuir, F. L.	1904.	Pace, J. D.

*Degree with honours.

DEGREE OF BACHELOR OF APPLIED SCIENCE.—*Concluded.*

Date of admission. Name.	Date of admission. Name.
1905. Pace, G.	1902. Stevenson, W. H.
1905. Parke, J.	1898.*Stull, W. W.
1904. Patten, B. B.	1903. Sutherland, W. H.
1904. Plunkett, T. H.	1903. Teasdale, C. M.
1901. Pope, A. S. H.	1900.*Tennant, D. C.
1903.*Powell, G. G.	1901. Tennant, W. C.
1902.*Price, H. W.	1893. Thomson, R. W.
1905. Raymond, D. C.	1905. Thomson, S. E.
1900.*Revell, G. E.	1901. Thorne, S. M.
1900. Richards, E.	1901. Thorold, F. W.
1901. Roaf, J. R.	1905. Townsend, C. J.
1903. Robertson, H. D.	1905.*Townsend, D. T.
1898.*Robinson, A. H. A.	1904. Trees, S. L.
1905. Roxburgh, G. S.	1896. Tremaine, R. C. C
1905. Rutherford, F. N.	1905. Trimble, A. V.
1902. Rust, H. P.	1905. Tucker, B. B.
1902. Sauer, M. V.	1900. Wagner, W. E.
1901. Saunders, H. W.	1905.*Walker, E. W.
1905.*Scheibe, H. M.	1898. Weekes, M. B.
1900.*Shanks, T.	1901. Weir, H. M.
1905. Sheply, J. D.	1905.*Williams, C. G.
1895. Shields, J. D.	1899.*Williamson, D. A.
1899. Shipley, A. E.	1904.*Wilson, N. D.
1903. Sinclair, D.	1905. Worthington, W. R.
1902.*Smallpeice, F. C.	1893.*Wright, C. H. C.
1898. Smiley, R. W.	1902. Wright, R. T.
1904. Smith, H. G.	1905. Wright, W. F.
1905. Smither, W. J.	1905.*Young, C. R.
1894.*Speller, F. N.	1903. Zahn, H.
1894. Squire, R. H.	

*Degree with honours.

Degree of Civil Engineer (C.E.)

1898. Alison, T. H.	1886. Kennedy, J. H.
1898. Ashbridge, W. T.	1895. McAllister, J. E.
1895. Bowman, A. M.	1901. McDowall, R.
1893. Bowman, F. M.	1898. Mitchell, C. H.
1892. Chewett, H. J.	1896. Moore, J. E. A.
1900. Connor, A. W.	1885. Morris, J. L.
1901. Francis, W. J.	1892. Thomson, T. K.
1900. Haultain, H. E. T.	1894. Tyrrell, H. G.
1893. Innes, W. L.	1889. Tyrrell, J. W.

Degree of Mining Engineer (M.E.)

1897. Bucke, M. A.	1900. Laidlaw, J. T.
--------------------	----------------------

Degree of Mechanical Engineer (M.E.)

1900. White, A. V.	1905. Laschinger, E. J.
1901. Johnston, A. C.	

Degree of Electrical Engineer (E.E.)

1896. Ross, R. A.	1902. Elliott, H. P.
1903. Chubbuck, L. B.	1905. Hemphill, W.

*Degree with honours.

GRADUATES.

NOTE.—Graduates are requested to inform the Registrar of changes in their addresses.

1881.

Course.	Name and address.	Occupation.
1. J. L. Morris, C.E., O.L.S.	Engineer and Surveyor. Pembroke, Ont.	

1882.

1. D. JeffreyContractor.
Windsor, Missouri.
1. J. H. Kennedy, C.E., O.L.S. ...Chief Engineer, Vancouver, Victoria & Eastern Railway.
Midway, B. C.
1. J. McAree, B.A.Sc., D.T.S. .. (deceased).

1883.

1. D. Burns, O.L.S.Supt. of Construction,
A.M. Can. Soc. C.E., Carnegie Technical Schools.
Pittsburgh, Pa.
1. G. H. DugganManager, Mexico Heat, Light
M. Can. Soc. C.E., and Power Co.
Mexico, Mex.
1. J. W. Tyrrell, C.E., D.L.S.Consulting Engineer and Surveyor.
Hamilton, Ont.

1884.

1. W. C. KirklandChief Engineer, Drainage Commis-
New Orleans, La. sion of New Orleans.
1. J. McDougall, B.A.York County Engineer.
A.M., Inst. C.E.
York County Municipal
Hall, Toronto, Ont.
1. A. R. Raymer Asst. Chief Engineer, P. & L. E.
Beaver, Pa. Ry.
1. James Robertson, O.L.S. Engineer and Surveyor.
Glencoe, Ont.
1. E. W. Stern Weiskept & Stern,
M. Am. Soc. C.E., Consulting Engineers, Steel
68 William St., New York. Structures, Buildings, etc.

1885.

Course.	Name and address.	Occupation.
1. J. F. Bleakley	Civil Engineer. Sullivan Block, Seattle, W. T.	
1. H. J. Bowman, D. & O. L. S....	Consulting Engineer. M. Can. Soc. C.E., Berlin, Ont.	(County Clerk and Treasurer)
1. E. E. Henderson, O.L.S.	Civil Engineer. Henderson P. O., Me.	
1. B. A. Ludgate, O.L.S.	Asst. Engineer, P. & L. E. Ry. Pittsburgh, Pa.	
1. O. McKay, O.L.S.	Civil Engineer and Surveyor. Walkerville, Ont.	

1886.

1. A. M. Bowman, D.L.S.	Consulting and Constructing Pittsburgh, Pa.	Engineer.
1. E. B. Hermon, D. & O.L.S.	Asst. Engineer Vancouver Power Vancouver, B. C.	Co.
1. Robert Laird, O.L.S.	Engineer on Construction, Haileybury, Ont.	Temiskaming Ry.
1. T. Kennard Thomson, C.E.	Consulting Engineer. M. Am. Soc. C. E., 13-21 Park Row, New York.	
1. H. G. Tyrrell, C.E.	Chief Engineer, A.M. Can. Soc. C.E., 2151 Fulton Ave., Cincinnati, O.	The Brackett Bridge Co.

1887.

1. J. C. Burns (deceased).		
1. A. E. Lott	Consulting Railway Engineer, Los Angeles, Cal.	441 Bradbury Bldg.
1. A. L. McCulloch, O.L.S.	City Engineer. A. M. Can. Soc. C. E., Nelson, B. C.	
1. F. Martin, M.B., O.L.S.	Physician.	
1. C. H. Pinhey, D. & O.L.S.	Engineer for Contractor, Soulanges Coteau Landing.	Canal.
1. J. Rogers, O.L.S.	Town Engineer. Mitchell, Ont.	

1888.

Course.	Name and address.	Occupation.
1. J. F. Apsey, O.L.S.	610 Cathedral St., Baltimore, Md.	Consulting Engineer.
1. W. T. Ashbridge, C.E.	Edmonton, Alta.	Engineer and Surveyor.
1. Edward F. Ball	A.M. Can. Soc. C.E., Room 400, Grand Central St'n., New York, N.Y.	Civil Engineer.
1. D. B. Brown, O.L.S.	Quebec, P. Q.	Locating Engineer, Transcontinental Ry. (G.T.P.)
1. C. M. Canniff	Toronto.	Engineer, Expanded Metal and Fire-Proofing Co.
1. H. J. Chewett, C.E., B.A.Sc....	A. M. Can. Soc. C. E., 83½ York St., Toronto, Ont.	Manager, Siche Gas Co.
1. J. Gibbons, D. & O.L.S.	Ottawa, Ont.	Surveying Staff, Dept. of Interior.
1. R. McDowall, O.L.S., C.E.	A. M. Can. Soc. C. E., Owen Sound, Ont.	Town Engineer.
1. G. W. McFarlen, O.L.S.	Toronto, Ont.	City Engineer's Staff.
1. C. J. Marani	49 Cornell St., Cleveland, O.	
1. G. R. Mickle, B.A.	Toronto, Ont.	Professor of Mining Engineering, School of Practical Science.
1. J. H. Moore, O.L.S.	Smith's Falls, Ont.	Town Engineer.
1. G. H. Richardson	Ottawa, Ont.	Assist. City Engineer.
1. K. Rose	15 William St., New York.	Consulting Engineer.
1. J. E. Ross, D. & O.L.S.	Kamloops, B. C.	Surveying Staff, Dept. of Interior.
1. C. H. C. Wright, B.A.Sc.	Toronto, Ont.	Professor of Architecture, School of Practical Science.

1889.

1. B. Carey	Toronto, Ont.
1. W. J. Chalmers	Vanport, Pa.

1889.—*Concluded.*

Course.	Name and address.	Occupation.
1. W. A. Clement	City Engineer. M. Can. Soc. C. E., Vancouver, B. C.	
1. G. F. Hanning	Locating Engineer, Transcontinen- Winnipeg, Man. tal Railway, Lake Abitibi.	
1. H. E. T. Haultain, C.E.	Mining Engineer. M. Can. Soc. C.E., Nelson, B. C.	
1. J. Irvine	Engineering Staff, C. P. R. Wetaskiwin, Alta.	
1. D. D. James, B.A., B.A.Sc.	Assistant Engineer, Mackenzie, Toronto, Ont. Mann & Co.	
1. F. X. Mill (deceased).		
1. H. K. Moberley	District Engineer and Surveyor. Moosomin, Assa.	
1. T. R. Rosebrugh, M.A.	Professor in Electrical Engineering, Toronto, Ont. School of Practical Science.	
1. T. Wickett, M. D.	Physician. 362 Cannon St. E., Hamilton, Ont.	

1890.

5. W. E. Boustead (deceased).		
1. F. M. Bowman, O.L.S., C.E. ...	Structural Engineer, Pittsburgh, Pa.	Riter-Conley Mfg. Co.
1. M. A. Bucke, M.E. (deceased).		
1. G. D. Corrigan (deceased).		
1. J. A. Duff, B.A. (deceased).		
1. A. B. English (deceased).		
1. N. L. Garland	Garland Manufacturing Co. Toronto, Ont.	76 Bay Street.
1. J. Hutcheon, O.L.S.	City Engineer. Guelph, Ont.	
1. W. L. Innes, O.L.S., C.E.	Manager, Canadian Cannery, Ltd. Simcoe, Ont.	
1. E. B. Merrill, B.A., B.A.Sc. ...	Consulting Electrical and Mechani- 16 King St. West, Toronto. cal Engineer.	
1. J. R. Pedder (deceased).		
3. R. A. Ross, E.E.	Ross & Holgate, Consulting 80 St. Francis Xavier St., Montreal, P. Q.	Electrical and Mechanical Engineers.

1890.—*Concluded.*

Course.	Name and address.	Occupation.
1. T. H. Wiggins, O.L.S.	District Surveyor and Engineer, Regina, Assa.	Dept. of Public Works, N.W.T.
1. W. J. Withrow	Patent Examiner, Patent Branch, Ottawa, Ont.	Dept. of Agriculture.

1891.

1. H. J. Beatty, O.L.S.	Engineer and Surveyor. Eganville, Ont.	
1. T. R. Deacon, O.L.S.	President. Winnipeg, Man.	Manitoba Iron Works, Ltd.
1. C. W. Dill	General Manager, A.M. Can. Soc. C.E., Toronto, Ont.	Constructing and Paving Co., McKinnon Bldg.
5. O. S. James, B.A.Sc.	Chemist for J. E. Wilkinson Co., Toronto, Ont.	Gold and Silver Refiners, 71 Lombard St.
1. A. Lane, (deceased).		
1. J. E. McAllister, B.A.Sc., C.E....	Supt. British Columbia Copper Greenwood, B. C.	Smelting Works.
3. E. B. Merrill, B.A., B.A.Sc....	Consulting Electrical and Mechani- cal Engineer. 16 King St. West, Toronto, Ont.	
1. J. E. A. Moore, C.E.	Estimating Engineer, Wellman- Cleveland, O.	Seaver & Morgan Engineering Co.
1. W. Newman, O.L.S.	City Engineer. A.M. Can. Soc. C.E., Windsor, Ont.	
1. J. K. Robinson (deceased).		
1. W. B. Russel	Chief Engineer, North Bay, Ont.	Temiskaming & Northern Ry.
1. G. E. Silvester, O.L.S.	Mining Engineer, Canadian Cop- per Co. Copper Cliff, Ont.	
1. H. D. Symmes	Contractor, Niagara Falls, Ont.	Ontario Power Co.

1892.

1. J. R. Allan, O.L.S.	Ranchman. Macleod, Alta.	
1. T. H. Alison, B.A.Sc., C.E. ...	Chief Engineer, Augustus Smith Co 149 Broadway. New York.	

1892.—*Concluded.*

Course.	Name and address.	Occupation
1.	A. G. Anderson, Port Dover, Ont.	
1.	C. Fairchild, D. & O.L.S.	Surveying Staff, Dept. of Interior. Brantford, Ont.
1.	J. B. Goodwin, B.A.Sc.	Asst. Engineer, McCall Ferry Bonview, Pa. Power Co.
4.	C. E. Langley	Langley & Langley, Architects. Mail Bldg., Toronto, Ont.
1.	A. T. Laing, B.A.Sc.	Registrar, Toronto, Ont. School of Practical Science.
1.	E. J. Laschinger, B.A.Sc.	Asst. Engineer, Consolidated Gold Johannesburg, Fields of South Africa. Transvaal, S. A.
5.	W. Lawson, B.A.Sc.	Manager, Stirling Sugar Co. Stirling, Col.
3.	W. A. Lea, B.A.Sc. (deceased).	
1.	B. McEntee, B.A.Sc., 28 Queen St. E., Toronto.	
3.	C. G. Milne, B.A.Sc.	Chief Engineer, Hamilton Bridge Hamilton, Ont. Works Co.
1.	Chas. H. Mitchell, B.A.Sc.	With Westinghouse Elec. and C.E., M. Can. Soc. C.E., Mfg. Co. M. Am. Soc. C.E., Wilkinsburg, Pa.
1.	N. L. Playfair	Superintendent, Playfair Lumber Midland, Ont. Co.
1.	J. M. Prentice (deceased).	
1.	J. A. Ross	Chief Draughtsman L. S. & M. S. Cleveland, O. Ry.
1.	Albert N. Smith	Superintending Representative of 330 Main St., Julian Kennedy, Consulting Pittsburg, Pa. Engineer.
1.	R. W. Thompson, B.A.Sc.	Mine Captain, Consolidated Gold Johannesburg, Fields of South Africa. Transvaal, S. A.
3.	A. V. White, M.E.	Mechanical Engineer. Toronto, Ont.

1893.

Course.	Name and address.	Occupation.
1. A. G. Ardagh	Toronto, Ont.	Resident Engineer, C. P. R.
4 *H. F. Ballantyne, B.A.Sc.	244 Fifth Ave., New York.	Firm of Ballantyne & Evans, Architects and Engineers.
1. G. L. Brown, O.L.S.	Morrisburg, Ont.	County Engineer, Dundas, Stormont and Glengarry.
1.*L. C. Charlesworth, D.L.S.	Edmonton, Alta.	Director of Surveys for Alberta.
1. T. H. Dunn, O.L.S.	Winchester, Ont.	Firm of Dunn & Fullerton, Civil Engineers.
1. J. M. R. Fairbairn, P.L.S.	Toronto, Ont.	Division Engineer, C. P. R.
4.*W. Fingland	39 Caryl Ave., Yonkers, N. Y.	Architect.
1. C. Forester,	Toronto, Ont.	
1.*W. J. Francis, C.E.	M. Can. Soc. C.E., M. Am. Soc. C.E., Peterboro, Ont.	Engineer of Hydraulic Lift Locks, Trent Canal.
3.*A. R. Goldie	Galt, Ont.	Manager, Goldie & McCulloch Engine Works.
3 S. C. Hanly	Midland, Ont.	Mechanical Engineer.
4.*J. Keele, B.A.Sc.	Ottawa, Ont.	Geological Survey of Canada.
1. J. T. Laidlaw, B.A.Sc., M.E....	Cranbrook, B. C.	Firm of McVitte & Laidlaw, Mining Engineers and Surveyors.
3. F. L. Lash	Batavia, Java.	Manager, Batavia Electric Light Co.
1. A. L. McAllister, B.A.Sc.	149 Milton St., Brooklyn, N. Y.	Draftsman, American Steel Corporation.
1. T. J. McFarlen	Ferrona, N. S.	Chief Chemist, Nova Scotia Steel Co.
1 *A. J. McPherson, B.A.Sc.	D.L.S., Dawson, Yukon Terr.	Surveyor for Saskatchewan.

* Diploma with honours.

1893.—*Concluded.*

Course.	Name and address.	Occupation.
1	A. F. McCallum, B.A.Sc. Quebec, P. Q.	Division Engineer. Transcontinental Ry. (G.T.P.)
1.	W. T. Main Baraboo, Wis.	Div. Engineer's Office, Chicago & North Western Ry. Co.
1.	V. G. Marani Cleveland, Ohio.	Assistant Engineer Cleveland Gas, Light & Coke Co.
1.	W. Mines, B.A.Sc. Cleveland, Ohio.	With Brown Hoisting Co.
3.*	J. M. Robertson Montreal, P. Q.	Superintendent, Repair and Test- ing Dept., Montreal Light, Heat and Power Co.
1.	R. Russell Pembroke, Ont.	Civil Engineer.
1.*	F. N. Speller, B.A.Sc. Pittsburgh, Pa.	Metallurgical Engineer, National Tube Works.
1.	R. H. Squire, B.A.Sc., O.L.S... 54 Market St., Brantford, Ont.	Engineer, Ontario Portland Cement Co.
1.	W. V. Taylor, O.L.S. A.M. Can. Soc. C.E., Montreal, P. Q.	Engineering Staff, Locomotive and Machine Co., Ltd.
1.*	R. B. Watson Dawson, Yukon Terr.	Mining Engineer.

1894.

3.*	R. W. Angus, B.A.Sc. Toronto, Ont.	Lecturer in Mechanical Engineer- ing, School of Practical Science.
1.	H. F. Barker, Box 31, Halifax, N. S.	
1.	A. T. Beauregard, B.A.Sc. Philadelphia, Pa.	With the United Gas Improvement Co.
1.	A. E. Bergey Pittsburgh, Pa.	With American Bridge Co. Keystone Branch.
3.	D. G. Boyd Toronto, Ont.	Draftsman, Public Works Dept.
3.	W. A. Bucke Toronto, Ont.	With Canadian General Electric Co.
1.	J. Chalmers, O.L.S A.M. Can. Soc. C.E., Winnipeg, Man.	Bridge Engineer, Canadian Northern Ry.

* Diploma with honours.

1894.—*Concluded.*

Course.	Name and address.	Occupation.
4.*J. A. Ewart, B.A.Sc.	The Architectural and Engineering 193 Sparks St., Ottawa, Ont.	Co. of Canada.
3. W. J. Herald, B.A.Sc.	With Dominion Iron & Steel Co. Sydney, N. S.	
3. H. E. Job, B.A.Sc.	Manager, Toronto and Hamilton Hamilton, Ont.	Electric Co.
3. A. C. Johnston, B.A.Sc., M.E..	Consulting Mechanical Engineer.	
1. S. M. Johnston, B.A.Sc., P.L.S..	City Engineer. Greenwood, B. C.	
1. J. E. Jones	Manager, M. H. Treadwell & Co., Pittsburgh, Pa.	Engineers, Founders and Ma- chinists.
3. N. M. Lash	Asst. Electrical Engineer, Montreal, P. Q.	Bell Telephone Co.
1.*A. L. McTaggart, B.A.Sc.	Draftsman, National Tube Works. McKeesport, Pa.	
3.*W. Minty, B.A.Sc.	General Manager Moss Bay Hema- Workington, Eng.	tite, Iron and Steel Co., Ltd.
3. C. J. Nicholson,	Preston, Ont.	
1. H. Rolph	Inspector for Canadian Inspection 146 St. James St., Montreal, Que.	Co.
1. J. D. Shields, B.A.Sc.	Sewer Engineer, Staff of City Toronto, Ont.	Engineer.
3. A. K. Spotton	With Goldie & McCulloch Engine Galt, Ont.	Works.
1. Angus Smith, O.L.S.	City Engineer. A. M. Can. Soc. C.E., Stratford, Ont.	
3. R. T. Wright, B.A.Sc.	Draftsman, Westinghouse Machine Pittsburgh, Pa.	Co.

1895.

1. J. Armstrong, B.A.Sc.	Locating Engineer, G.T.P. Surveys. Edmonton, N. W. T.	
3. A. E. Blackwood	Manager, New York Office, 42 Broadway, New York.	Sullivan Machinery Co.
1. E. J. Boswell, D.L.S.	Construction Department, C. P. R. Winnipeg, Man.	

* Diploma with honours.

1895.—*Concluded.*

Course.	Name and address.	Occupation.
3.	G. Brebner Schenectady, N. Y.	With General Electric Co.
3.	W. M. Brodie, B.A.Sc. Pittsburgh, Pa.	With the Green Engineering Co. of Chicago.
3.	L. L. Brown 77 Rutland Rd., Brooklyn, N. Y.	Supt., The Foundation Co. 35 Nassau St.
4.	R. J. Campbell Chicago, Ill.	Artist, Chicago Tribune.
3.	A. W. Connor, B.A., C.E. Toronto, Ont.	Consulting Engineer, 36 Toronto St.
1.	J. S. Dobie, B.A.Sc., O.L.S. ... Regina, Sask.	Director of Surveys for Saskatche- wan.
1.	F. W. Guernsey Rossland, B. C.	Engineer, War Eagle Mining Co.
4	*A. H. Harkness, B.A.Sc. Toronto, Ont.	Engineering Dept., Canada Foundry Co.
3	H. S. Hull, B.A.Sc. Johnstown, Pa.	Structural Drawing, Cambria Steel Co.
3.*	J. McGowan, B.A., B.A.Sc. ... Toronto, Ont.	Lecturer in Applied Mechanics, School of Practical Science.
3.	W. N. McKay Atwood, Ont.	Manager, Bank of Hamilton.
3.	H. L. McKinnon, B.A.Sc. Cleveland, O.	With the Brown Hoisting Machine Co.
1.	W. W. Meadows, D. & O.L.S.... Walkerville, Ont.	Engineering Staff, L.E. & D.R. Ry.
1.	F. J. Bobinson, D. & O.L.S. ... Regina, N. W. T	Deputy Commissioner of Public Works, Saskatchewan.
3.	F. T. Stocking Victor, Col.	With Pike's Peak Power Co.
3.	R. C. C. Tremaine, B.A.Sc. (Deceased).	

1896.

2.*	J. W. Bain, B.A.Sc. Toronto, Ont.	Lecturer in Applied Chemistry, School of Practical Science.
2.	L. T. Burwash Whitehorse, Yukon.	Mining Inspector.
3.*	G. M. Campbell Chicago, Ill.	Asst. Supt., Western Electric Co.

* Diploma with honours.

1896.—*Concluded.*

Course.	Name and address.	Occupation.
2.	J. A. DeCew, B.A.Sc. 14 Sun Life Bldg., Montreal, P. Q.	Consulting Chemical Engineer.
3.*	H. P. Elliott, B.A.Sc., M.E. ... Pittsburgh, Pa.	Electrical Engineer, Westinghouse Electric and Mfg. Co.
3	W. C. Gurney Toronto, Ont.	Vice-President, Gurney Foundry Co.
3 *	H. V. Haight, B.A.Sc. Sherbrooke, P. Q.	Engineer, Canadian Rand Drill Co.
1.	W. F. Laing (deceased).	
3.	R. R. Lawrie (deceased).	
3.	C. MacBeth, B.A.Sc. Detroit, Mich.	Engineer, Track Dept., Detroit United Railways.
3.	J. A. McMurchy Pittsburgh, Pa.	Mechanical Engineer, Westinghouse Machine Co.
1.	T. Martin, B.A.Sc. Cranbrook, B. C.	Resident Engineer. C. P. R.
3.	R. R. Scheibe Toronto, Ont.	With Toronto Engraving Co.

1897.

2.	E. Andrews, B.Sc. Blaenau, Festiniog, N. Wales.	Res. Engineer, Main Offerin Slate Quarry Co.
2.*	J. A. Bow Anaconda, Mon.	Draftsman, Washoe Smelter.
1.	H. S. Carpenter, B.A.Sc., O.L.S. Peterboro, Ont.	Asst. Engineer, Trent Valley Canal.
5.	H. W. Charlton, B.A.Sc. Ottawa, Ont.	Assistant Analyst at Experimental Farm.
4.*	E. A. Forward A.M. Can. Soc. C.E., Iroquois, Ont.	Assistant Engineer, Georgian Bay Canal Survey.
3.*	A. T. Gray, B.A.Sc. Schenectady, N. Y.	With General Electric Co.
3.	W. A. B. Hicks Buffalo, N. Y.	With Lackawanna Steel Co.
4	C. F. King Hamilton, Ont.	Geological Survey of Canada.
1.	H. W. Proudfoot (deceased).	

* Diploma with honours.

1897.—*Concluded.*

Course.	Name and address.	Occupation.
2.*A. H. A. Robinson, B.A.Sc.	Government Inspector of Mines, Cobalt, Ont.	Temiscaming District.
4 W. F. Scott	Structural Engineer for J. G. How- ard, Archt. Univ. of California.	Berkeley, Cal.
3.*R. W. Smiley, B.A.Sc.	With Wellman-Seaver & Morgan Cleveland, Ohio.	Engineering Co.
2.*W. W. Stull, B.A.Sc., O.L.S....	Surveyor and Mining Engineer. Sudbury, Ont.	
1.*M. B. Weekes, B.A.Sc., D.L.S.	Topographical Surveys Branch, Ottawa, Ont.	Dept. of the Interior.
1. E. A. Weldon.	Provincial Land Surveyor's Office. Winnipeg, Man.	

1898.

1. W. H. Boyd, B.A.Sc.	Geological Survey of Canada. Ottawa, Ont.	
2. W. E. H. Carter, B.A.Sc.	E. T. Carter & Co., Toronto, Ont.	85 Front St. E.
3. E. H. Darling	With Hamilton Bridge Works Co. A. M. Can. Soc. C.E., Hamilton, Ont.	
1. W. F. Grant, B.A.Sc.	Engineer for H. D. Symmes, Niagara Falls, Ont.	Contractor, Ontario Power Co.
1. T. S. Kormann, B.A.Sc.	Manager, Kormann Brewing Co. Toronto, Ont.	
3 J. E. Lavrock	Draftsman, International Harves- ter Co.	Hamilton, Ont.
4. D. Macintosh, B.A.Sc., B. Arch.	Firm of Hoyt & Mackintosh, Baltimore, Md.	Architects, 11 East Pleasant St.
1. F. W. McNaughton, O.L.S.	Deputy Minister of Public Works. Winnipeg, Man.	
1. J. H. Shaw, O.L.S.	Surveyor. North Bay, Ont.	
3. A. E. Shipley, B.A.Sc.	Mechanical Engineer. Box 1,097, Milwaukee, Wis.	
3 *F. C. Smallpiece, B.A.Sc.	With Canadian General Electric Peterboro, Ont.	Co., Steam Turbine Dept.
1. R. W. Smith, P.L.S.	Surveyor. Revelstoke, B. C.	

* Diploma with honours.

1898.—*Concluded.*

Course.	Name and address.	Occupation.
1.*J. A. Stewart, M.A.	Rankin, Pa.	Estimating and Designing Dept., McClintic-Marshall Construc- tion Co.
1.*H. L. Vercoe	Winnipeg, Man.	Engineer, Winnipeg Electric Rail- way Co.
3. T. A. Wilkinson	New York, N. Y.	Assistant Statistician, Westing- house Church Kerr Co.
3. D. A. Williamson, B.A.Sc.	Hamilton, Ont.	With Hamilton Bridge Works Co.

1899.

3.*T. Barber	Meaford, Ont.	Hydraulic Engineer, Georgian Foundry.
2. J. T. M. Burnside, B.A.Sc.	Toronto.	Engineering Staff, McKenzie, Mann Ry. system.
3. L. B. Chubbuck, B.A.Sc.	Pittsburgh, Pa.	Engineering Dept., Westinghouse Electric and Mfg Co.
2. G. A. Clothier	Rossland, B. C.	Engineer, Le Roi Mining Co.
1. C. Cooper	Carlyle, Assa.	Surveyor.
2. R. W. Coulthard, B.A.Sc.	Fernie, B. C.	Chief Chemist, Crow's Nest Pass Coal Co.
3. J. A. Craig, B.A.Sc.	Toronto, Ont.	Office of Delano-Osborne Engineer- ing Co.
2. J. C. Elliott,	Kelso, Ont.	
3. W. E. Foreman, B.A.Sc.	Pittsburgh, Pa.	Construction Dept., Westinghouse Electric and Mfg. Co.
3. E. Guy, B.A.Sc.	Industry, Pa.	Engineering Dept., Westinghouse Electric and Mfg. Co.
3.*W. Almon Hare, B.A.Sc.	A.M. Can. Soc. C.E., Toronto.	Asst. Engineer, Underfeed Stoker Co.
1. R. Latham, B.A.Sc.	Hamilton, Ont.	Asst. Engineer, T. H. & B. Ry.
3. W. Monds, B.A.Sc.	Toronto, Ont.	Engineering Staff of C. B. Smith, C.E.
3. A. S. H. Pope, B.A.Sc.	Pittsburgh, Pa.	Electrical Eng. Dept., Westing- house Electric and Mfg. Co.

* Diploma with honours.

1899.—*Concluded.*

Course.	Name and address.	Occupation.
1. J. Patterson, B.A.	Allahabad, India.	Professor of Physics, Muir Central College.
2.*G. E. Revell, B.A.Sc.	Montreal, P. Q.	Office of Ross & Holgate, Consulting Engineers.
3.*E. Richards, B.A.Sc.	Toronto, Ont.	Electrical Engineer Hydro-Electric Power Commission.
3. G. A. Saunders	Wilkinsburg, N. Y.	With Westinghouse Electric & Mfg. Co.
1.*T. Shanks, B.A.Sc., D.L.S.	Ottawa, Ont.	Topographical Surveys Branch, Dept. of the Interior.
1.*D. C. Tennant, B.A.Sc.	Montreal, P. Q.	With Dominion Bridge Co.
3. W. W. VanEvery	108 Union Ave., Montreal, P. Q.	Eng. Dept., Canada Car Co.
2. G. H. Watt, D.L.S.	Ottawa, Ont.	Topographical Surveys Branch, Dept. of the Interior.
3. W. E. Wagner, B.A.Sc.	Wilmington, Del.	Superintendent of Construction for M'f'g's Constructing Co.
3. E. Yeates	London, Ont.	London Machine Tool Co.

1900.

1. J. L. Allen	A. M. Can. Soc. C.E., Halifax, N. S.	Office of Provincial Engineer.
2. E. G. R. Ardagh, B.A.Sc.	Toronto, Ont.	Demonstrator in Chemistry, School of Practical Science.
3. J. A. Bain	Ottawa, Ont.	Dept. of Public Works of Canada.
3. J. H. Barley, B.A.Sc.	Pittsfield, Mass.	With Stanley Electric Mfg. Co.
2.*M. C. Boswell, M.A., B.A.Sc. ...	Toronto, Ont.	Demonstrator in Chemistry, School of Practical Science.
1. L. T. Bray, D. & O.L.S.	Amherstburg, Ont.	Surveyor.
3. J. Clark	Corapotes, Pa.	Electrician, P. & L. E. R.R.
2. J. E. Davison, B.A.Sc.	Toronto, Ont.	Engineering Staff, Can. Northern Ry.

* Diploma with honours.

1900.—Continued.

Course.	Name and address.	Occupation.
3.	E. D. Dickinson Schenectady, N. Y.	With General Electric Co.
3.	G. W. Dickson, B.A.Sc. Welland, Ont.	With Robertson Machinery Co.
2.*	H. A. Dixon, B.A.Sc., M.L.S., Winnipeg, Man.	Engineering Staff, Can. Northern Ry.
2.	C. H. Fullerton, O.L.S. Winchester, Ont.	Firm of Dunn & Fullerton, Civil Engineers.
3	W. S. Guest Sherbrooke, Que.	Draftsman, Jenckes Machine Co.
3	W. Hemphill, B.A.Sc. 718 Fidelity Bldg., Buffalo, N. Y.	With Cataract Power and Conduit Co.
3	S E M. Henderson Schenectady, N. Y.	Designing Engineer, General Electric Co.
3.	J. A. Henry Schenectady, N. Y.	Engineering Dept., General Electric Co.
2	H. S. Holcroft, B.A.Sc., D.L.S., Toronto, Ont.	Surveyor.
3.	H. A. Johnston Toronto, Ont.	Mechanical Engineer, 148 Clinton St.
3.	J. C. Johnston Toronto, Ont.	City Engineer's Staff.
2.*	J. A. Johnston, B.A.Sc. Ignace, Ont.	Contractor.
2.	R. E. McArthur Calgary, Alta.	Resident Engineer, C. P. R.
2.	J. G. McMillan, B.A.Sc. Toronto, Ont.	Demonstrator in Mining, School of Practical Science.
3.	L. Haun Miller Cleveland, O.	Interstate Engineering Co.
2.	E. V. Neelands, B.A.Sc. ... Crystal, Colo.	Supt. Black Queen Mining and Milling Co.
1.*	E. H. Phillips, D.L.S. Ottawa, Ont.	Topographical Surveys Branch, Dept. of the Interior.
2.	J. R. Roaf, B.A.Sc. Michel, B. C.	Draftsman, Crow's Nest Pass Coal Co.
3.*	C. H. E. Rounthwaite North Bay, Ont.	Draftsman, Party No. 1, G. T. P. Ry.

* Diploma with honours.

1900.—*Concluded.*

Course.	Name and address.	Occupation.
2.	H. W. Saunders, B.A. Sc. Gary, W. Va.	Engineering Dept., U. S. Coal & Coke Co.
1.	A. Taylor Winnipeg, Man.	With C. P. R. Land Department.
1.	W. C. Tennant, B.A.Sc.	(Deceased).
2.	S. M. Thorne, B.A.Sc. Clifton, Arizona.	Engineering Staff, Arizona Copper Co.
1.	F. W. Thorold, B.A.Sc. Calgary, Alta.	City Engineer.
1.	H. M. Weir, B.A.Sc. Londonderry, N. S.	With Londonderry Iron & Mining Co.
3.	F. D. Withrow Toronto, Ont.	Depart of Public Works of Canada.

1901.

1.	R. H. Barrett, B.A.Sc., O.L.S....	(Deceased).
3.	W. G. Beatty Fergus, Ont.	Manager, Beatty Bros., Implement Manufacturers.
3.	G. M. Bertram Scranton, Pa.	Representative of the Sullivan Ma- chinery Co.
3.	W. J. Bowers Toronto, Ont.	Assistant Engineer, Office of John Galt, C.E.
3.	E. T. J. Brandon, B.A.Sc. Niagara Falls, N. Y.	Office of W. C. Johnston, C.E.
3.	W. P. Brereton, B.A.Sc. Toronto, Ont.	Office of M. J. Haney, C.E., Home Life Bldg.
3.	J. T. Broughton Pittsburgh, Pa.	Draftsman, McClintock-Marshall Co.
3.*	W. G. Chace, B.A.Sc. Toronto, Ont.	Engineering Staff of C. B. Smith, C.E.
3.	A. G. Christie 71 Broadway, New York.	Steam Turbine Engineer, Allis-Chalmers Co.
3.	J. R. Cockburn, B.A.Sc. Toronto, Ont.	Lecturer in Drawing, School of Practical Science.
1.	W. A. Duff Walkerville, Ont.	Draftsman, Canadian Bridge Co.
2.*	D. E. Eason, B.A.Sc. Peterboro, Ont.	Engineering Staff, Trent Valley Canal.
1.*	S. Gagné, B.A.Sc. 23 Scott St., Toronto, Ont.	Assistant Engineer, T. & H. Ry. and T. & N. P. Co.

* Diploma with honours.

1801.—*Concluded.*

Course.	Name and address.	Occupation.
3	N. R. Gibson, B.A.Sc. Niagara Falls, N.Y.	Engineering Staff, Niagara Falls Hydraulic Power and Mfg. Co.
1.	C. Harvey, B.A.Sc., D.L.S. Kelowna, B. C.	Consulting Engineer and Surveyor.
2.	A. T. E. Hamer Toronto, Ont.	Managing Director, North Shore Copper & Smelting Co., Ltd.
2.	F. C. Jackson North Bay, Ont.	Res. Engineer, Temiskaming and Northern Ontario Ry.
3.*	A. Laidlaw Detroit, Mich.	Assistant Engineer, Trussed Con- crete Steel Co.
3.	W. C. Lumbers Calgary, Alta.	Engineering Staff, C.P.R.
3.	A. C. Macdougall Massena, N. Y.	Asst. Supt., Pittsburgh Reduction Co.
3.	A. T. C. McMaster, B.A.Sc. Clifton, Arizona.	Assistant Engineer, Arizona Copper Co.
1.	G. MacMillan Ottawa, Ont.	Topographical Surveys Branch, Dept. of Interior.
3.*	H. G. McVean, B.A.Sc., Gananoque, Ont.	Engineering Staff of W. Chipman, C.E.
2.	W. C. Matheson Toronto, Ont.	With McKenzie, Mann Co.
3.	H. T. Middleton Massena, N. Y.	Assistant Superintendent, Indestructible Fibre Co.
2.	J. I. R. Parsons, B.A., D.L.S., Toronto, Ont.	Engineer and Surveyor.
1.	G. H. Power Prince Albert, Sask.	Resident Engineer, Waterworks and Sewers.
3.*	H. W. Price, B.A.Sc. Toronto, Ont.	Lecturer in Electrical Engineering, School of Practical Science.
1.	H. P. Rust, B.A.Sc. A.M. Can. Soc. C.E., Niagara Falls, Ont.	Assistant Engineer, Electrical Development Co.
3.	M. V. Sauer, B.A.Sc. Niagara Falls, Ont.	Assistant Engineer, Niagara Falls Power Co.
3.	W. H. Stevenson, B.A.Sc. Chicago, Ill.	General Inspector, Griffin Wheel Co.
1.	R. D. Willson Winnipeg, Man.	Engineering Staff, Canadian Northern Ry. Co.

* Diploma with honours.

1902.

Course.	Name and address.	Occupation.
3.*H. G. Barber	Topographical Surveys Branch, Ottawa, Ont.	Department of the Interior.
1. W. J. Blair, B.A.Sc., D.&O.L.S., Blair, Sinclair & Smith, New Liskeard, Ont.	Engineers and Land Surveyors.	
3. J. M. Brown	With Westinghouse Machine Co., Pittsburgh, Pa.	Steam Turbine Dept.
2. W. G. Campbell	Engineering Staff, Toronto.	W. T. Jennings, C.E.
2. A. R. Campbell	Office of Willis Chipman, C.E. Toronto, Ont.	
3. C. G. Carmichael	Testing Department, Cincinnati, O.	Bullock Electric Mfg. Co.
2.*W. Christie, B.A.Sc.	Asst. to H. W. Selby, D.L.S. Markerville, Alta.	
2. F. T. Conlon	Welland Canal Engineering Staff. Thorold, Ont.	
3. H. V. Connor.....	With Westinghouse Electric and Pittsburgh, Pa.	Mfg. Co.
2.*M. T. Culbert	Mining Engineer. Cobalt, Ont.	
2. R. Cumming	Engineering Staff, Toronto, Ont.	Haney & Miller, Contractors.
1. W. E. Douglas, B.A.	Fellow in Surveying, Toronto, Ont.	School of Practical Science.
3.*R. J. Dunlop	With Canadian Westinghouse Co. Toronto, Ont.	
2. W. M. Edwards, B.A.Sc.	With Hamilton & Brantford Ry. Hamilton, Ont.	Company.
3. W. Elwell	Topographical Surveys Branch, Ottawa, Ont.	Dept. of the Interior.
2. J. M. Empey, B.A.Sc., D.L.S....	Topographical Surveys Branch, Ottawa, Ont.	Dept. of the Interior.
2.*D. L. H. Forbes	Chief Engineer, Clifton, Arizona.	Arizona Copper Co.
1.*A. E. Gibson, B.A.Sc., Toronto, Ont.	Office of M. J. Haney, C.E., Home Life Bldg.	

* Diploma with honours.

1902.—Continued.

Course.	Name and address.	Occupation.
3.	A. C. Goodwin New Kensington, Pa.	Draftsman, Pittsburgh Reduction Co.
3.	C. P. Henwood Middleton, Pa.	Draftsman, National Tube Co.
3.	D. M. Johnston Toronto, Ont.	Manager, Volta Electric Repair Works.
2.	R. H. Knight, B.A.Sc., D.L.S... Edmonton, Alta.	Engineer and Surveyor.
5.*	F. L. Langmuir, B.A.Sc., Ph.D., (Freiburg i/B.) Bermondsey, London, S.E.	Worshipful Co. of Leather Seller's Tanning School.
3.	A. H. McBride, B.A.Sc. Toronto, Ont.	Asst. to R. J. Parke, Consulting Electrical Engineer.
1.	A. L. McLennan, D.L.S. Toronto, Ont.	Office of J. McDougall, C.E., York Co. Engineer.
3.	J. T. Mackay Toronto, Ont.	Student in Faculty of Medicine, University of Toronto.
3.	J. F. S. Madden Peterboro, Ont.	Erecting Engineering Dept., Can. Gen. Electric Co.
3.*	C. H. Marrs Hamilton, Ont.	Draftsman, Hamilton Bridge Works Co.
3.	P. Mathison, B.A.Sc. Pittsburgh, Pa.	With Westinghouse Electric and Mfg. Co.
3.	R. S. Mennie Pittsburgh, Pa.	With Crucible Steel Co.
2.	H. H. Moore, D.L.S. Calgary, Alta.	Engineer and Surveyor.
1.*	T. S. Nash Ottawa, Ont.	Topographical Survey's Branch, Department of the Interior.
1.	G. G. Powell, B.A.Sc. Toronto, Ont.	Asst. to General Manager, Constructing and Paving Co.
1.*	W. F. Ratz, D.L.S. Ottawa, Ont.	International Boundary Commis- sion, Department of the In- terior.
3.	H. D. Robertson, B.A.Sc. Pittsburgh, Pa.	With Westinghouse Electric and Manufacturing Co.
3.*	D. Sinclair, B.A.Sc. New Liskeard, Ont.	Blair, Sinclair & Smith, Engineers and Surveyors.
2.*	I. J. Steele Ottawa, Ont.	Transcontinental Ry.

* Diploma with honours.

1902.—*Concluded.*

Course.	Name and address.	Occupation.
3.	W. H. Sutherland, B.A.Sc. Montreal, Que.	Assistant Engineer, Montreal Water and Power Co
3.*	T. Taylor 481 Campbell St., Wilkinsburg, Pa.	Draftsman, McClintie-Marshall Construction Co., Rankin, Pa.
2.*	C. M. Teasdale, Toronto, Ont.	Fellow in Surveying, School of Practical Science.
3.	A. A. Wanless Sydney Mines, N. S.	Shop Supt., Nova Scotia Steel and Coal Co.
3.	H. J. Zahn, B.A.Sc. Pittsburgh, Pa.	Draftsman, Taylor & Dean, 203 Market St.

1903.

3.	H. G. Acres Morenci, Arizona.	Asst. Mechanical Engineer, Arizona Copper Co.
1.	J. G. R. Alison New Haven, Conn.	With Riter-Conley Mfg. Co.
3.*	H. H. Angus, B.A.Sc. East Pittsburgh, Pa.	With Westinghouse Machine Co.
3.	J. A. Beatty Wilmington, Del.	Engineering Staff, Manufacturers' Contracting Co.
3.*	J. Breslove Pittsburgh, Pa.	Westinghouse Machine Co.
2.	J. H. Burd, O.L.S., Owen Sound, Ont.	Surveyor.
1.*	E. L. Burgess, D.L.S. Ottawa, Ont.	Topographical Surveys Branch, Dept. of the Interior.
1.	F. F. Clarke, D. & O.L.S. Toronto, Ont.	Staff of C. N. Ry.
2.	C. L. Coulson Welland, Ont.	Assistant to Geo. Ross, C.E.
3.*	A. E. Davison, B.A.Sc., Niagara Falls, N.Y.	Engineering Staff, Niagara Falls Hydraulic Power & Mfg. Co.
3.	C. J. Fensom, B.A.Sc. Toronto, Ont.	Engineering Department, Fenson Elevator Co., Ltd.
2.*	E. O. Fuce, O.L.S. Galt, Ont.	Resident Engineer, Galt Sewerage System.
3.*	F. A. Gaby, B.A.Sc. Toronto, Ont.	Engineering Department, Canadian General Electric Co.

* Diploma with honours.

1903.—*Continued.*

Course.	Name and address.	Occupation.
3.	R. E. George Dover, N. H.	Electrical and Gas Engineer, The United Gas & Electric Co.
1.	J. C. Gardner, B.A.Sc. Toronto, Ont.	Office of W. T. Jennings, C.E., Consulting Engineer.
1.*	P. Gillespie, B.A.Sc. Toronto, Ont.	Lecturer in Theory of Construction. School of Practical Science.
1.	W. A. Gourlay Lindsay, Ont.	Engineering Staff, C.P.R.
2.	J. F. Hamilton, B.A.Sc., Dunedin, Ont.	
2.	G. S. Hanes, B.A.Sc. Windsor, Ont.	City Engineer.
5.*	J. A. Horton Massena, N. Y.	With Pittsburgh Reduction Co.
2.	F. Y. Harcourt, B.A. Niagara Falls, Ont.	Ontario Niagara Falls Power Co.
1.	L. J. Hayes Toronto, Ont.	Structural Department, Canada Foundry Co.
1.*	F. D. Henderson Ottawa, Ont.	Topographical Surveys Branch, Dept. of the Interior.
3.	J. G. Jackson 55 Duane St., New York, N. Y.	Engineering Dept., New York Edison Co.
3.	C. K. Johnston Pefferlow, Ont.	Merchant.
1.	H. Johnston, O.L.S. Berlin, Ont.	Davis & Johnston, Civil Engineers and Surveyors.
3.	A. G. Lang 517 Manhattan Ave., New York, N. Y.	Student, Columbia University.
1.*	A. J. Latornell Toronto, Ont.	Post Graduate Course, School of Practical Science.
1.*	H. J. McAuslan, B.A.Sc., O.L.S.. Eganville, Ont	Asst. to J. H. Beatty, D.L.S.
3.	J. A. McFarlane, B.A.Sc. Hamilton, Ont.	With Hamiton Bridge Works Co.
1.*	A. L. McNaughton Ottawa, Ont.	Topographical Surveys Branch, Dept. of the Interior.

* Diploma with honours.

1903.—*Continued.*

Course.	Name and address.	Occupation.
5.*F. G. Marriott, B.A.Sc.	Post-Graduate Course in Chemistry, University of Freiburg, in Breisgau, Germany.	
3.*C. A. Maus,	Paris, Ont.	
3.*M. L. Miller	Draftsman, International Harvester Hamilton, Ont.	Co.
3. P. H. Mitchell.	Niagara Falls, Ont.	
2.*R. H. Montgomery	Hydrographic Surveys Branch, B.A.Sc., D.L.S.,	Dept. of Marine and Fisheries. Ottawa, Ont.
1. F. A. Moore	Topographical Surveys Branch, Ottawa, Ont.	Dept. of the Interior.
3. E. E. Mullins	Baldwin Locomotive Works. Philadelphia, Pa.	
3. I. H. Nevitt, B. A. Sc.	With General Electric Co. Schenectady, N. Y.	
1. E. W. Oliver, B.A.Sc.	Asst. to Chief Engineer Eastern Toronto, Ont.	Lines, Mackenzie, Mann Rail- way System.
3. J. P. Oliver	Riter-Conley Mfg. Co. Pittsburgh, Pa.	
3. J. D. Pace, B.A.Sc.	With Westinghouse Electric & Mfg. Pittsburgh, Pa.	Co.
3. B. B. Patten, B.A.Sc.	St. George, Ont.	
2. D. H. Philp	Georgian Bay Canal Survey. Ottawa, Ont.	
3.*D. H. Pinkney	Foreman, No. 2 Butt Weld Mill, Lorain, O.	National Tube Dept., U. S. Steel Corporation.
2. T. H. Plunkett, B.A.Sc.,	Office of McKenzie, Mann. Toronto, Ont.	
1.*H. L. Seymour	Topographical Surveys Branch, Ottawa, Ont.	Dept. of the Interior.
3.*H. M. Scheibe	Student apprentice, Westinghouse Pittsburgh, Pa.	Electric & Mfg. Co.
1. J. H. Smith, D. & O.L.S.	Blair, Sinclair & Smith, New Liskeard, Ont.	Engineers and Surveyors.

* Diploma with honours.

1903.—*Concluded.*

Course.	Name and address.	Occupation.
3.	H. G. Smith, B.A.Sc. Toronto, Ont.	Demonstrator in Electrical Engin- ing, School of Practical Science.
3.	S. L. Trees, B.A.Sc. Toronto, Ont.	Supt. Mfg. Dept., Samuel Trees & Co., 42 Wellington St. E.
1.	J. Waldron Sable River, N. S.	Resident Engineer, H. & S. W. Ry.
3.*	S. B. Wass Toronto, Ont.	Office of Jas. McDougall, County Engineer.
3.	J. A. Whelihan Glen Ridge, N. J.	Edison Storage Battery Co.
3.	H. F. White, London, Ont.	White & Co. Engine Works.
2.*	C. G. Williams Sun Life Bldg., Montreal, Que.	Representing Max Erfurt Sizing Patents.
1.*	N. D. Wilson, B.A.Sc., Winnipeg, Man.	Staff of Can. Northern Ry.
1.*	C. R. Young Toronto, Ont.	Office of Jas. McDougall, County Engineer.

1904.

3.*	J. H. Alexander 328 St. Joseph St., Lachine, P. Q.	Draftsman, Dominion Bridge Co.
3.*	J. H. Barrett Toronto, Ont.	With the Wm. Davies Co., Ltd.
3.	M. B. Bonnell East Pittsburgh, Pa.	Westinghouse Electric Apprentice- ship Dept., and Mfg. Co.
3.	T. D. Brown Toronto, Ont.	Post-Graduate Course, School of Practical Science.
3.	F. W. Burnham Toronto, Ont.	Post-Graduate Course, School of Practical Science.
3.	J. W. Calder St. Catharines, Ont.	With Martin Electrical Supply and Construction Co.
1.	A. J. Campbell, B.A.Sc., Collingwood, Ont.	
1.	N. C. Cameron Montreal, Que.	With Ross & Holgate, Consulting Electrical and Mechanical En- gineers.

* Diploma with honours.

1904.—Continued.

Course.	Name and address.	Occupation.
3.*A. M. Campbell, B.A.Sc.	With Dominion Bridge Co. Montreal, Que.	
4. J. B. Challies	Topographical Surveys Branch, Ottawa, Ont.	Dept. of the Interior.
2. C. A. Chilver	Assistant to C. C. Fairchild, D.L.S. Calgary, Alta.	
2. H. L. Chilver	Topographical Surveys Branch, Ottawa, Ont.	Dept. of the Interior.
1. U. W. Christie, B.A.Sc., O.L.S.,	Chesley, Ont.	
2. P. C. Coates	Mining Engineer. Cobalt, Ont.	
1. S. B. Code	Moore & Code, Smith's Falls, Ont.	Civil Engineers and Surveyors.
1.*T. F. Code, B.A.Sc.	Office of Moore & Code. Smith's Falls, Ont.	
1.*W. A. Cowan	C. P. R. Engineering Staff. Toronto, Ont.	
3.*S. E. Craig	Engineering Dept., G. T. Ry. Stratford, Ont.	
1.*S. R. Crerar, B.A.Sc., O.L.S....	Fellow in Surveying, Toronto, Ont.	School of Practical Science.
3. W. M. Currie	Chief Inspector and Engineer, Hamilton, Ont.	Hamilton Steel and Iron Co.
3. H. H. Depew	Supt., Crow's Nest Pass Electric Ferne, B. C.	Light and Power Co.
2. A. J. Elder	Topographical Surveys Branch, Ottawa, Ont.	Dept. of the Interior.
2. J. G. Fleck	Lumber Merchant. Madawaska, Ont.	
1.*A. L. Ford, B.A.Sc.,	Toronto, Ont.	
3. W. S. Gibson, B.A.Sc.	Asst. Supt., The Dale Co. New York, N. Y.	
1. J. P. Gordon	Engineering Staff, V. V. & E. Ry. Keremeos, B.C.	
3. W. W. Gray, B.A.Sc.	Fellow in Thermodynamics, Toronto, Ont.	School of Practical Science.
1. A. Gray	Post-Graduate Course, Toronto, Ont.	School of Practical Science.

* Diploma with honours.

1904.—Continued.

Course.	Name and address.	Occupation.
3.	W. K. Greenwood, B.A.Sc. Bowmanville, Ont.	Supt., Bowmanville Electric Light Co.
1.	L. D. Hara St. Catharines, Ont.	Leveller and Draftsman, Welland Canal Co.
3.	C. J. Harris Toronto, Ont.	Post-Graduate Course, School of Practical Science.
1.	J. B. Heron Toronto, Ont.	Post-Graduate Course, School of Practical Science.
1.	E. M. M. Hill Guelph, Ont.	Engineering Staff, Canadian Nor- thern Ry.
2.	S. N. Hill Ottawa, Ont.	Topographical Surveys Branch, Dept. of the Interior.
2.	C. J. Ingles Toronto, Ont.	Office of Willis Chipman, C.E., Consulting Engineers.
1.	E. A. James, B.A.Sc. Thornhill, Ont.	Resident Engineer, Toronto-Sud- bury Branch, C. P. R.
1.	P. V. Jermyn, B.A.Sc. 118 King St. W., Toronto, Ont.	C.P.R. Construction Dept.
3.	W. S. H. Keefe Fort Covington, N. Y.	Manager and Treasurer, Light, Heat and Power Co.
3.	W. J. Larkworthy Niagara Falls, N. Y.	Engineering Staff, Niagara Falls Hydraulic Power and Mfg. Co.
3.	O. B. McCuaig, B. A. Sc., Toronto, Ont.	
1.	G. G. McEwen, B.A.Sc. Winchester, Ont.	With Dunn & Fullerton, Drainage Engineers.
1.*	W. G. McFarlane, B.A., Toronto, Ont.	
3.*	C. P. McGibbon, B.A. East Pittsburgh, Pa.	With Westinghouse Electric and Mfg. Co.
3.	C. McKay, B.A.Sc. East Pittsburgh, Pa.	With the Westinghouse Electric and Mfg. Co.
1.	D. McMillan Woodville, Ont.	
3.	G. J. Manson, St. Catharines, Ont.	
1.*	W. N. Moorhouse Shawinigan Falls, P. Q.	Asst. Engineer, Northern Aluminium Co.

* Diploma with honours.

1904.—Continued.

Course.	Name and address.	Occupation.
3.	E. E. Moore Glen Falls, N. Y.	With the Inter-State Iron Co.
3.	W. H. Munro Peterboro, Ont.	Wm. Hamilton Mfg. Co.
3.	G. Pace, B.A.Sc. East Pittsburgh, Pa.	With the Westinghouse Electric and Mfg. Co.
3.	W. S. Pardoe Toronto, Ont.	Post-Graduate Course, School of Practical Science.
3.	J. Paris North Bay, Ont.	Inspector, Temiskaming & Northern Ontario Railway.
2.	J. Parke, B.A.Sc. Toronto, Ont.	Lecture Assistant in Chemistry. School of Practical Science.
3.	W. J. Peaker Sault Ste. Marie, Ont.	Draftsman, Lake Superior Power Co.
3.*	A. E. Pickering Sault Ste. Marie, Ont.	Draftsman, Lake Superior Power Co.
1.	D. L. C. Raymond, B.A.Sc. Detroit, Mich.	With Trussed Concrete Steel Co.
1.	Reid, F. B. Toronto, Ont.	Post-Graduate Course, School of Practical Science.
3.*	M. R. Riddell Toronto, Ont.	Post-Graduate Course, School of Practical Science.
3.	G. S. Roxburgh, B.A.Sc. Winnipeg, Man.	Manager, Featherstonhaugh & Co., Patent Solicitors and Engin- eers.
2.	F. N. Rutherford, B.A.Sc. ... Niagara Falls, Ont.	Assistant to J. H. Jackson, O.L.S.
1.*	J. D. Sheply, B.A.Sc. Toronto, Ont.	Fellow in Drawing, School of Practical Science.
3.	F. W. Slater Toronto, Ont.	Post-Graduate Course, School of Practical Science.
3.*	R. S. Smart Ottawa, Ont.	Manager, Featherstonhaugh & Co., Patent Solicitors and Engin- eers.
3.	W. J. Smither, B.A.Sc. Seattle, Wash.	Manager, Seattle Office of Abner Doble Co.
3.	S. E. Thompson, B.A.Sc. Niagara Falls, Ont.	Engineering Staff, Electrical Development Co.
3.	C. J. Townsend, B.A.Sc. Toronto, Ont.	Hydraulic Dept., Canada Foundry Co.

* Diploma with honours.

1904.—*Concluded.*

Course.	Name and address.	Occupation.
1. D. T. Townsend, B.A.Sc, O.L.S..	Fellow in Drawing, Toronto, Ont.	School of Practical Science.
1. A. V. Trimble, B.A.Sc.	With Mackenzie, Mann & Co. Toronto, Ont.	
3. B. B. Tucker, B.A.Sc.	Resident Engineer of The Canada Morrisburg, Ont.	Tin Plate and Sheet Co., Ltd.
2.*E. Wade	Fellow in Chemistry, Toronto, Ont.	School of Practical Science.
1.*E. W. Walker, B.A.Sc.	Fellow in Hydraulics, Toronto, Ont.	School of Practical Science.
3. J. P. Watson	Post-Graduate Course, Toronto, Ont.	School of Practical Science.
1. J. M. Weir	Engineering Staff, G. T. Ry. Hamilton, Ont.	
1.*A. F. Wells, O.L.S.	Post-Graduate Course, Toronto, Ont.	School of Practical Science.
1. W. R. Worthington, B.A.Sc. ...	Asst. Sewer Engineer, Toronto, Ont.	Staff of City Engineer.
3. W. F. Wright, Toronto, Ont.		

1905.

2.	H. W. Arens	Assistant Engineer. Norwood Grove, Man.	
3.	R. H. Armour	Fellow in Electrical Engineering, Toronto, Ont.,	School of Practical Science.
3.*C.	B. Aylsworth	Fellow in Drawing, Toronto, Ont.	School of Practical Science.
1.*W.	Barber	Post-Graduate Course, Toronto, Ont.	School of Practical Science.
2.*W.	A. Begg	Post-Graduate Course, Toronto, Ont.	School of Practical Science.
3.*G.	G. Bell	Draftsman, Canada Foundry Co. Toronto, Ont.	
3.	W. M. Bristol	Fellow in Drawing, Toronto, Ont.	School of Practical Science.
2.	W. C. Campbell	Post-Graduate Course, Toronto, Ont.	School of Practical Science.
3.	W. R. Carson	With New York Edison Co. New York, N. Y.	

* Diploma with honours.

1905 — *Continued.*

Course.	Name and address.	Occupation.
3. S. R. A. Clement	Draftsman, Temiskaming and Toronto, Ont. Northern Ontario Ry.	
3. T. E. Corrigan	Chicago Edison Co. 88 Market St., Chicago.	
1.*N. L. R. Crosby	Post-Graduate Course, Toronto, Ont. School of Practical Science.	
1. G. H. Ferguson	Post-Graduate Course, Toronto, Ont. School of Practical Science.	
3. H. S. Fierheller	Post-Graduate Course, Toronto, Ont. School of Practical Science.	
3. F. W. Harrison	Draftsman, Brooklyn Edison Co. Brooklyn, N. Y.	
1. M. C. Hendry	Engineering Staff T. & N. O. Ry. North Bay, Ont.	
2. C. S. L. Hertzberg	Post-Graduate Course, Toronto, Ont. School of Practical Science.	
3. W. G. Hewson	Post-Graduate Course, Toronto, Ont. School of Practical Science.	
1. G. S. Jones,	Smith's Falls, Ont.	
3.*G. Kribs	Post-Graduate Course, Toronto, Ont. School of Practical Science.	
1. A. Latornell	Post-Graduate Course, Toronto, Ont. School of Practical Science.	
3. J. W. Leighton,	500 Church St., Toronto.	
1.*T. R. Loudon	Post-Graduate Course, Toronto, Ont. School of Practical Science.	
1.*W. W. McGregor (deceased).		
2. D. W. McKenzie	Draftsman, Engineering Dept., Winnipeg, Man. C. N. Ry.	
3.*C. A. McLean	Canadian Westinghouse Co. Toronto, Ont.	
3. R. W. Moffatt	Post-Graduate Course, Toronto, Ont. School of Practical Science.	
3. L. W. Morden	Fellow in Physics, Toronto, Ont. School of Practical Science.	
3. G. R. Munro	Post-Graduate Course, Toronto, Ont. School of Practical Science.	

* Diploma with honours.

1905.—Continued.

Course.	Name and address.	Occupation.
3.*W.	G. Nicklin Grand Rapids, Mich.	Draftsman, Leitlelt Iron Works.
1.*B.	B. Patten St. George, Ont.	
1. E. P. A.	Phillips Toronto, Ont.	Post-Graduate Course, School of Practical Science.
2. E. F.	Pullen Oakville, Ont.	Draftsman, Transcontinental R. R. Survey.
2. G. L.	Ramsey Toronto, Ont.	Post-Graduate Course, School of Practical Science.
3.*R.	B. Ross Toronto, Ont.	Fellow in Electrical Engineering, School of Practical Science.
5. T. E.	Rothwell Toronto, Ont.	Post-Graduate Course, School of Practical Science.
2.*G.	S. Scott Broadway and 108th Sts., New York, N. Y.	With Geological Survey of Canada.
3. H. V.	Serson 111 Broadway, New York.	Engineering Dept., Hudson's Co.
3. C. H.	Shirriff Toronto, Ont.	Post-Graduate Course, School of Practical Science.
3.*C.	E. Sisson Peterboro, Ont.	Engineering Dept., Can. Gen. Elec. Co.
1. D. L. N.	Stewart, Collingwood, Ont.	
1. M. A.	Stewart Toronto, Ont.	Roadway Dept., City Hall.
3. W. F.	Stubbs Galt, Ont.	Draftsman, Goldie & McCulloch.
1. N. H.	Sturdy 405 Hoyt St. Buffalo, N. Y.	Draftsman, C. C. Conkling & Co., Consulting Engineers.
1. W. G.	Swan Toronto, Ont.	Post-Graduate Course, School of Practical Science.
1.*F.	H. Sykes Nipigon, Ont.	Draftsman, National Transconti- nental Ry.
3. L. R.	Thomson Toronto, Ont.	Post-Graduate Course, School of Practical Science.

* Diploma with honours.

1905.—*Concluded.*

Course.	Name and address.	Occupation.
3.	E. D. Tillson 728 W. Front St., Plainfield, N. J.	Draftsman, Pedrick & Ayer Co.
1.*	J. J. Trail Toronto, Ont.	Post-Graduate Course, School of Practical Science.
1.*	W. M. Treadgold Ottawa, Ont.	Computer, Dominion Observatory.
3.	W. E. Turner Toronto, Ont.	Post-Graduate Course, School of Practical Science.
3.	J. M. Vaughan Toronto, Ont.	Post-Graduate Course, School of Practical Science.
1.	H. L. Wagner Toronto, Ont.	Post Graduate Course, School of Practical Science.

CERTIFICATES.

MINERALOGY AND ASSAYING.

Date.	Name and Address.
1896.	G. Johnston
1896.	A. T. Tye c/o Empresa Hanséatica, Barran- quilla, Columbia, S. America.
1897.	E. B. Webster
1898.	A. N. McMillan Penetanguishene, Ont.
1900.	A. H. Smith Supt., Los Reyes Gold Mining and Milling Co., Oaxaca, Mexico.
1901.	G. A. Hunt

ELECTRICITY.

1896.	E. I. Sifton Manager, London Electric Con- struction Co., London, Ont.
1903.	W. Elwell Top. Surveys Branch, Dept of the Interior, Ottawa, Ont.

* Diploma with honours.

INDEX TO GRADUATES.

In the following alphabetical list of the Graduates is given the year of graduation of each student. In the preceding list, which is arranged by classes in the order of graduation, may be found additional information as to occupation, addresses, etc.

A.

Acres, H. G.	1903	Apsey, J. F.	1888
Alexander, J. H.	1904	Ardagh, J. A.	1893
Alison, T. H.	1892	Ardagh, E. G. R.	1900
Allan, J. R.	1892	Arens, H. W.	1905
Allan, J. L.	1900	Armour, R. H.	1905
Anderson, A. G.	1892	Armstrong, J.	1895
Andrews, E.	1897	Ashbridge, W. T.	1888
Angus, R. W.	1894	Aylsworth, C. B.	1905
Angus, H. H.	1903		

B.

Bain, J. A.	1900	Bleakley, J. F.	1885
Bain, J. W.	1896	Bonnell, M. B.	1904
Ball, E. F.	1888	Boswell, E. J.	1895
Ballantyne, H. F.	1893	Boswell, M. C.	1900
Barber, H. G.	1902	Boustead, W. E. (deceased)	1890
Barber, T.	1899	Bow, J. A.	1897
Barber, W.	1905	Bowers, W. J.	1901
Barker, H. P.	1893	Bowman, H. J.	1885
Barley, J. H.	1900	Bowman, F. M.	1890
Barrett, R. H.	1901	Bowman, A. M.	1886
Barrett, J. H.	1904	Boyd, D. G.	1894
Beatty, H. J.	1890	Boyd, W. H.	1898
Beatty, W. G.	1901	Brandon, E. T. J.	1901
Beatty, J. A.	1903	Bray, L. T.	1900
Beauregard, A. T.	1894	Brebner, G.	1895
Begg, W. A.	1905	Brereton, W. P.	1901
Bell, G. G.	1905	Breslove, J.	1903
Bergey, A. E.	1894	Bristol, W. M.	1905
Bertram, G. M.	1901	Brodie, W. M.	1895
Blackwood, A. E.	1895	Broughton, J. T.	1901
Blair, W. J.	1902	Brown, J. M.	1902

B.—*Concluded.*

Brown, D. B.	1888	Burd, J. H.	1903
Brown, G. L.	1893	Burgess, E. L.	1903
Brown, L. L.	1895	Burns, D.	1883
Brown, T. D.	1904	Burns, J. C. (deceased)...	1887
Bucke, M. A. (deceased)....	1890	Burnside, J. T. M.	1899
Bucke, W. A.	1894	Burwash, L. T.	1896

C.

Calder, J. W.	1904	Chubbuck, L. B.	1899
Cameron, N. C.	1904	Clark, J.	1900
Campbell, A. J.	1904	Clarke, F. F.	1903
Campbell, A. M.	1904	Clement, W. A.	1889
Campbell, W. G.	1902	Clement, S. R. A.	1905
Campbell, A. R.	1902	Clothier, G. A.	1899
Campbell, R. J.	1895	Coates, P. C.	1904
Campbell, G. M.	1896	Cockburn, J. R.	1901
Campbell, W. C.	1905	Code, S. B.	1904
Canniff, C. M.	1888	Code, T. F.	1904
Carey, B.	1899	Conlon, F. T.	1902
Carmichael, C. G.	1902	Connor, H. V.	1902
Carpenter, H. S.	1897	Connor, A. W.	1895
Carson, W. R.	1905	Cooper, C.	1899
Carter, W. E. H.	1898	Corrigan, G. D. (deceased)	1890
Chace, W. G.	1901	Corrigan, T. E.	1905
Challies, J. B.	1904	Coulson, C. L.	1903
Chalmers, W. J.	1889	Coulthard, R. W.	1899
Chalmers, J.	1894	Cowan, W. A.	1904
Charlesworth, L. C.	1893	Craig, J. A.	1899
Charlton, H. W.	1897	Craig, S. E.	1904
Chewett, H. J.	1888	Crerar, S. R.	1904
Chilver, C. A.	1904	Crosby, N. L. R.	1905
Christie, W.	1902	Culbert, M. T.	1902
Christie, U. W.	1904	Cumming, R.	1902
Christie, A. G.	1901	Currie, W. M.	1904

D.

Darling, E. H.	1898	Dixon, H. A.	1900
Davison, J. E.	1900	Dobie, J. S.	1895
Davison, A. E.	1903	Douglas, W. E.	1902
Deacon, T. R.	1891	Duff, J. A. (deceased) ...	1890
DeCew, J. A.	1896	Duff, W. A.	1901
Depew, H. H.	1904	Duggan, G. H.	1883
Dickson, G. W.	1900	Dunlop, R. J.	1902
Dickinson, E. D.	1900	Dunn, T. H.	1893
Dill, C. W.	1891		

E.

Eason, D. E.	1901	Elwell, W.	1902
Edwards, W. M.	1902	Empey, J. M.	1902
Elliott, H. P.	1896	English, A. B. (deceased) ..	1890
Elliot, J. C.	1899	Ewart, J. A.	1894

F.

Fairbairn, J. M. R.	1893	Ford, A. L.	1904
Fairchild, C.	1892	Forester, C.	1893
Fensom, C. J.	1903	Forman, W. E.	1899
Ferguson, G. H.	1905	Forward, E. A.	1897
Fierheller, H. S.	1905	Francis, W. J.	1893
Fingland, W.	1893	Fuce, E. O.	1903
Fleck, J. G.	1904	Fullerton, C. H.	1900
Forbes, D. L. H.	1902		

G.

Gaby, F. A.	1903	Goodwin, J. B.	1892
Gagne, S.	1901	Gordon, J. P.	1904
Gardner, J. C.	1903	Gourlay, W. A.	1903
Garland, N. L.	1890	Grant, W. F.	1898
George, R. E.	1903	Gray, A. T.	1897
Gibbons, J.	1888	Gray, W. W.	1904
Gibson, A. E.	1902	Gray, A.	1904
Gibson, N. R.	1901	Greenwood, W. K.	1904
Gibson, W. S.	1904	Guernsey, F. W.	1895
Gillespie, P.	1903	Gurney, W. C.	1896
Goldie, A. R.	1893	Guest, W. S.	1900
Goodwin, A. C.	1902	Guy, E.	1899

H.

Haight, H. V.	1896	Harrison, F. W.	1905
Hamer, A. T. E.	1901	Harvey, C.	1901
Hamilton, J. F.	1903	Haultain, H. E. T.	1889
Hanly, S. C.	1893	Hayes, L. J.	1903
Hanes, G. S.	1903	Hemphill, W.	1900
Hanning, G. F.	1889	Henderson, E. E.	1885
Hara, L. D.	1904	Henderson, F. D.	1903
Harcourt, F. Y., B.A.	1903	Henderson, S. E. M.	1900
Hare, W. A.	1899	Hendry, M. C.	1905
Harkness, A. H.	1895	Henry, J. A.	1900
Harris, C. J.	1904	Henwood, C.	1902

H.—*Concluded.*

Herald, W. J.	1894	Hill, E. M. M.	1904
Hermion, E. B.	1886	Hill, S. N.	1904
Heron, J. B.	1904	Holcroft, H. S.	1900
Hertzberg, C. S. L.	1905	Horton, J. A.	1903
Hewson, W. G.	1905	Hull, H. S.	1895
Hicks, W. A. B.	1897	Hutcheon, J.	1890

I.

Ingles, C. J.	1904	Irvine, J.	1889
Innis, W. L.	1890		

J.

Jackson, J. G.	1903	Johnston, H.	1903
Jackson, F. C.	1901	Johnston, A. C.	1894
James, O. S.	1891	Johnston, S. M.	1894
James, D. D.	1889	Johnston, H. A.	1900
James, E. A.	1904	Johnston, J. C.	1900
Jeffrey, D.	1882	Johnston, J. A.	1900
Jermyn, P. V.	1904	Johnston, C. K.	1903
Job, H. E.	1894	Jones, J. E.	1894
Johnston, D. M.	1902	Jones, G. S.	1905

K.

Keefe, W. S. H.	1904	Kirkland, W. C.	1884
Keele, J.	1893	Korman, T. S.	1898
Kennedy, J. H.	1882	Knight, R. H.	1902
King, C. F.	1897	Kribs, G.	1905

L.

Laidlaw, J. T.	1893	Latham, R.	1899
Laidlaw, A.	1901	Latornell, A. J.	1903
Laing, W. F.	1896	Latornell, A.	1905
Laing, A. T.	1892	Lavrock, J. E.	1898
Laird, R.	1886	Lawson, W.	1892
Lane, A. (deceased)	1891	Lawrie, R. R. (deceased)...	1896
Lang, A. G.	1903	Lea, W. A. (deceased)	1892
Langmuir, F. L.	1902	Leighton, J. W.	1905
Langley, C. E.	1892	Lott, A. E.	1887
Larkworthy, W. J.	1904	Loudon, T. R.	1905
Laschinger, E. J.	1892	Ludgate, B. A.	1885
Lash, F. L.	1893	Lumbers, W. C.	1901
Lash, N. M.	1894		

Mac.

MacBeth, C.	1896	Maccallum, A. F.	1893
MacKay, J. T.	1902	Macdougall, A. C.	1901
MacMillan, C.	1901	Mackintosh, D.	1898

Mc.

McAllister, J. E.	1891	McGregor, W. W.	1905
McAllister, A. L.	1893	McKay, O.	1885
McAree, J. (deceased)	1882	McKay, W. N.	1895
McArthur, R. E.	1900	McKay, C.	1904
McAuslan, H. J.	1903	McKenzie, D. W.	1905
McBride, A. H.	1902	McKinnon, H. L.	1895
McCuaig, O. B.	1904	McLean, C. A.	1905
McCulloch, A. L.	1887	McLennan, A. L.	1902
McDougall, J.	1884	McMaster, A. T. C.	1901
McDowall, R.	1888	McMillan, J. G.	1900
McEntee, B.	1892	McMillan, D.	1904
McEwen, G. G.	1904	McMurchy, J. A.	1896
McFarlane, J. A.	1903	McNaughton, A. L.	1903
McFarlane, W. G.	1904	McNaughton, F. W.	1898
McFarlen, G. W.	1888	McPherson, A. J.	1893
McFarlen, T. J.	1893	McTaggart, A. L.	1894
McGibbon, C. P.	1904	McVean, H. G.	1901
McGowan, J.	1895		

M.

Madden, J. F. S.	1902	Miller, M. L.	1903
Main, W. T.	1893	Milne, C. G.	1892
Manson, G. J.	1904	Mines, W.	1893
Marani, C. J.	1888	Mitchell, C. H.	1892
Marani, V. G.	1893	Moberley, H. K.	1889
Marriot, F. G.	1903	Moffatt, R. W.	1905
Marrs, C. H.	1902	Monds, W.	1899
Martin, F.	1887	Montgomery, R. H.	1903
Martin, T.	1896	Moore, H. H.	1902
Matheson, W. C.	1901	Moore, E. E.	1904
Mathison, P.	1902	Moore, J. H.	1888
Maus, C. A.	1903	Moore, J. E. A.	1891
Merrill, E. B.	1890	Moore, F. A.	1903
Mennie, R. S.	1902	Moorhouse, W. N.	1904
Meadows, W. W.	1895	Morden, L. W.	1905
Middleton, H. T.	1901	Morris, J. L.	1881
Mickle, G. R.	1888	Mullins, E. E.	1903
Minty, W.	1894	Munro, W. H.	1904
Mill, F. X. (deceased)	1889	Munro, G. R.	1905
Miller, L. Haun	1900		

N.

Nash, T. S.	1902	Nevitt, I. H.	1903
Neelands, E. V.	1900	Nicholson, C. J.	1894
Newman, W.	1891	Nicklin, W. G.	1905

O.

Oliver, E. W.	1903	Oliver, J. P.	1903
--------------------	------	--------------------	------

P.

Pace, J. D.	1903	Pickering, A. E.	1904
Pace, G.	1904	Pinhey, C. H.	1887
Pardoe, W. S.	1904	Pinkney, D. H.	1903
Paris, J.	1904	Playfair, N. L.	1892
Parke, J.	1904	Phillips, E. P. A.	1905
Parsons, J. L. R.	1901	Plunkett, T. H.	1903
Patten, B. B.	1903	Pope, A. S. H.	1899
Patten, B. B.	1905	Powell, G. G.	1902
Patterson, J.	1899	Power, G. H.	1901
Peaker, W. J.	1904	Prentice, J. M. (deceased)	1892
Pedder, J. R. (deceased).	1890	Price, H. W.	1901
Philp, D. H.	1903	Proudfoot, H. W. (deceased)	1897
Philips, E. H.	1900	Pullen, E. F.	1905

R.

Ramsey, G. L.	1905	Rogers, J.	1887
Ratz, W. F.	1902	Rolph, H.	1894
Raymer, A. R.	1884	Rose, K.	1888
Raymond, D. C.	1904	Rosebrugh, T. R.	1889
Reid, F. B.	1904	Ross, J. E.	1888
Revell, G. E.	1899	Ross, R. A.	1890
Richards, E.	1899	Ross, J. A.	1892
Richardson, G. H.	1888	Ross, R. B.	1905
Riddell, M. R.	1904	Rothwell, T. E.	1905
Roaf, J. R.	1900	Roxburgh, G. S.	1904
Robertson, H. D.	1902	Rounthwaite, C. H. E.	1900
Robertson, J.	1884	Russel, W. B.	1891
Robertson, J. M.	1893	Russel, R.	1893
Robinson, J. (deceased) ...	1891	Rust, H. P.	1901
Robinson, F. J.	1895	Rutherford, F. N.	1904
Robinson, A. H. A.	1897		

S.

Sauer, M. V.	1901
Saunders, G. A.	1899
Saunders, H. W.	1900
Scheibe, R. R.	1896
Scheibe, H. M.	1903
Scott, W. F.	1897
Scott, G. S.	1905
Serson, H. V.	1905
Seymour, H. L.	1903
Shanks, T.	1899
Shaw, J. H.	1898
Sheply, J. D.	1904
Shields, J. D.	1894
Shipley, A. E.	1898
Shirriff, C. H.	1905
Silvester, G. E.	1891
Sinclair, D.	1902
Sisson, C. E.	1905
Slater, F. W.	1904
Smallpiece, F. C.	1898
Smart, R. S.	1904
Smiley, R. W.	1897
Smith, A. N.	1892

Smith, A.	1894
Smith, H. G.	1903
Smith, R. W.	1898
Smith, J. H.	1903
Smither, W. J.	1904
Speller, F. N.	1893
Spotton, A. K.	1894
Squire, R. H.	1893
Steel, I. J.	1902
Stern, E. W.	1884
Stevenson, W. H.	1901
Stewart, J. A.	1898
Stewart, D. L. N.	1905
Stewart, M. A.	1905
Stocking, F. T.	1895
Stubbs, W. F.	1905
Stull, W. W.	1897
Sturdy, N. H.	1905
Sutherland, W. H.	1902
Swan, W. G.	1905
Sykes, F. H.	1905
Symmes, H. D.	1891

T.

Taylor, T.	1902
Taylor, W. V.	1893
Taylor, A.	1900
Teasdale, C. M.	1902
Tennant, D. C.	1899
Tennant, W. C.	1900
Thomson, T. K.	1886
Thomson, R. W.	1892
Thomson, S. E.	1904
Thomson, L. R.	1905
Thorne, S. M.	1900
Thorold, F. W.	1900

Tillson, E. D.	1905
Townsend, C. J.	1904
Townsend, D. T.	1904
Traill, J. J.	1905
Treadgold, W. M.	1905
Trees, S. L.	1903
Tremaine, R. C. C. (dec'd)	1895
Trimble, A. V.	1904
Tucker, B. B.	1904
Turner, W. E.	1905
Tyrrell, J. W.	1883
Tyrrell, H. G.	1886

V.

VanEvery, W. W.	1899
Vaughan, J. M.	1905

Vercoe, H. L.	1898
--------------------	------

W.

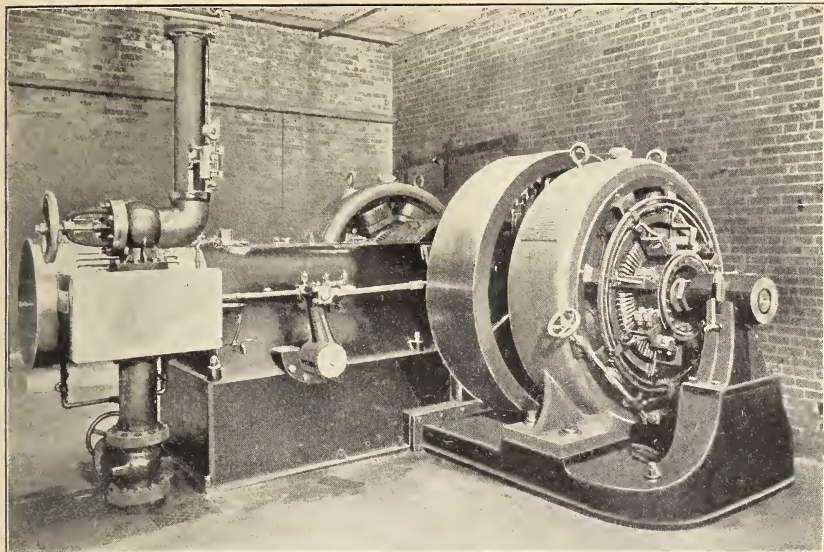
Wade, E.	1904	White, A. V.	1892
Wagner, W. E.	1899	White, H. F.	1903
Wagner, H. L.	1905	Wickett, T.	1889
Waldron, J.	1903	Wiggins, T. H.	1890
Walker, E. W.	1904	Wilkinson, T. A.	1898
Wanless, A. A.	1902	Williamson, D. A.	1898
Wass, S. B.	1903	Williams, C. G.	1903
Watson, R. B.	1893	Willson, R. D.	1901
Watson, J. P.	1904	Wilson, N. D.	1903
Watts, G. H.	1899	Withrow, W. J.	1890
Weekes, M. B.	1897	Withrow, F. D.	1900
Weir, H. M.	1900	Worthington, W. R.	1904
Weir, J. M.	1904	Wright, C. H. C.	1888
Weldon, E. A.	1897	Wright, R. T.	1894
Wells, A. F.	1904	Wright, W. F.	1904
Whelihan, J. A.	1903		

Y.

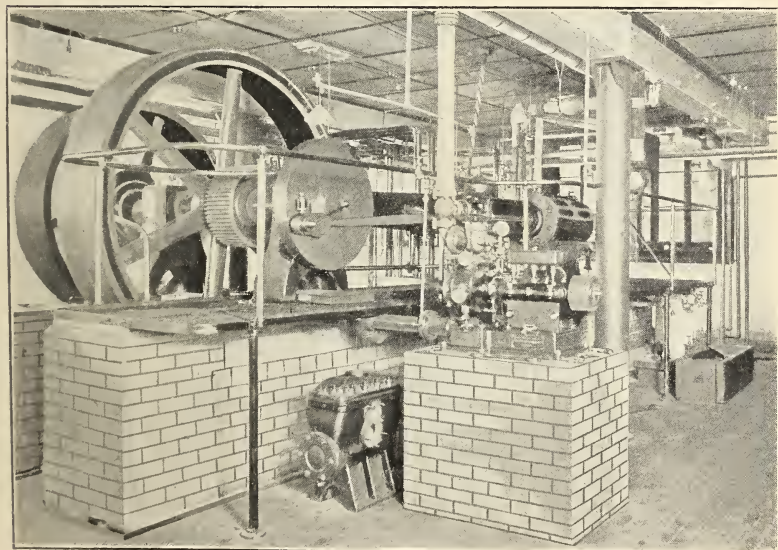
Yeates, E.	1899	|	Young, C. R.	1903
-----------------	------	--	-------------------	------

Z.

Zahn, H. J.	1902
------------------	------



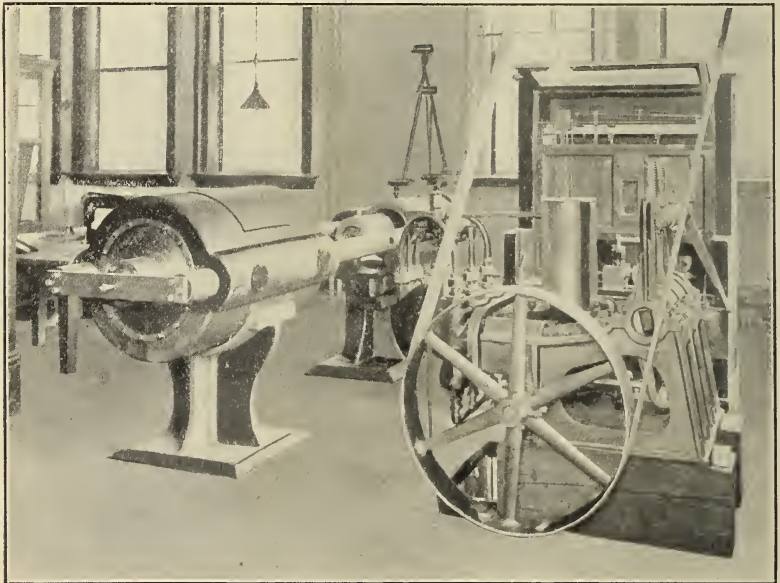
POWER ENGINE AND GENERATORS.



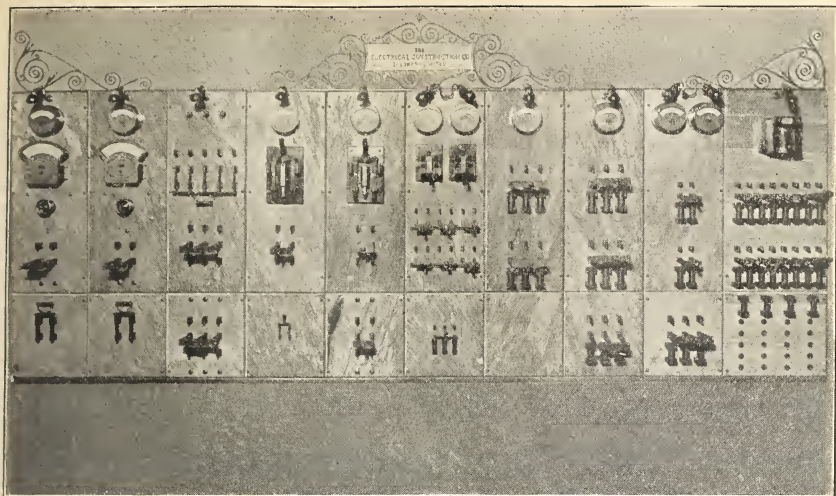
EXPERIMENTAL ENGINE AND STEAM TURBINE.



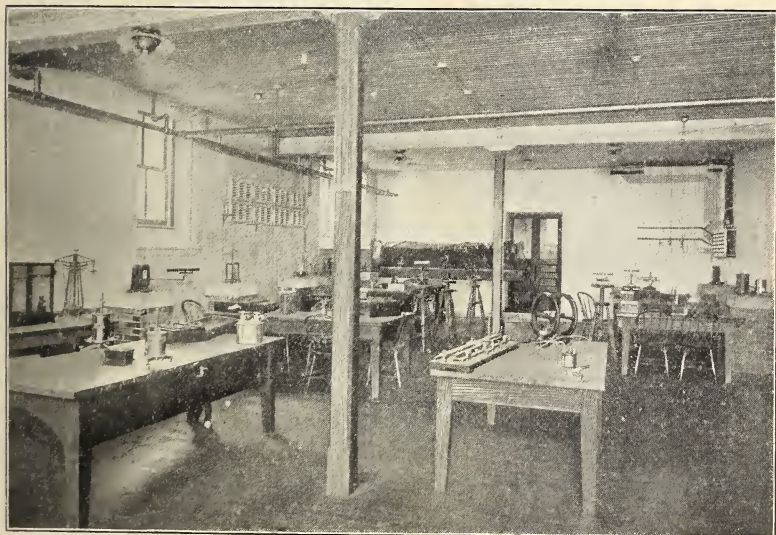
SENIOR ELECTRICAL LABORATORY



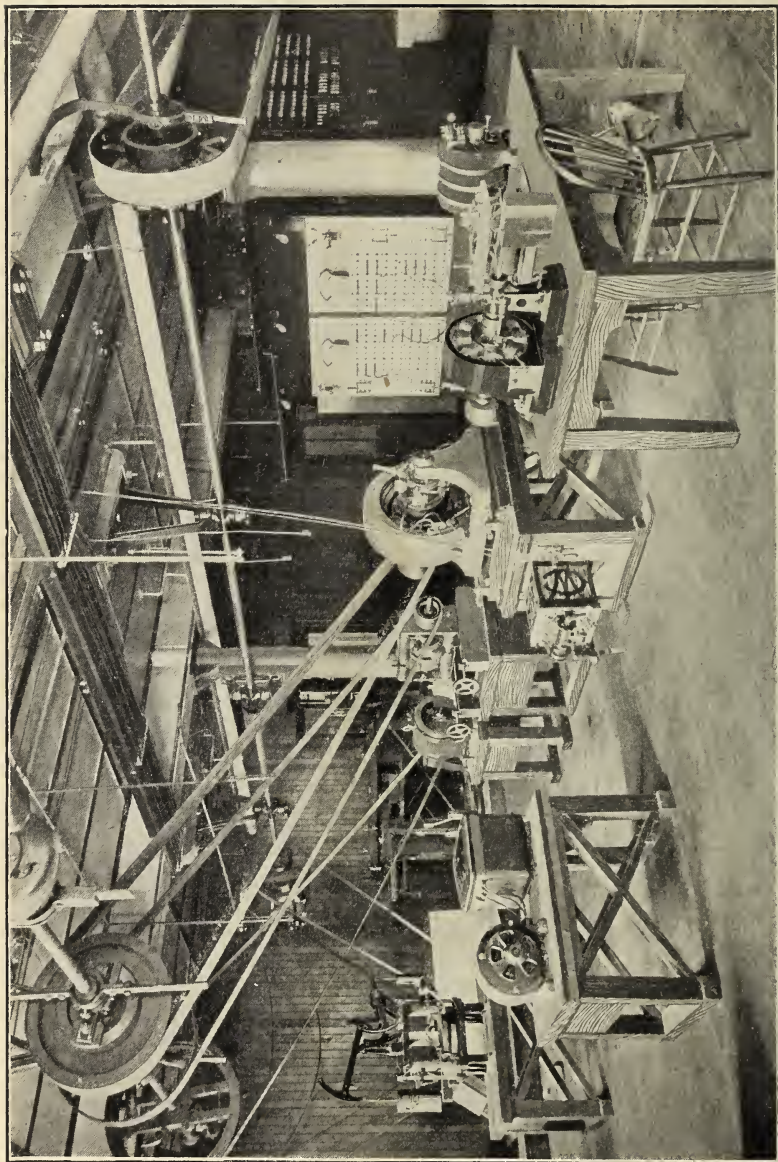
EMERY TESTING MACHINE.



SWITCH BOARD.



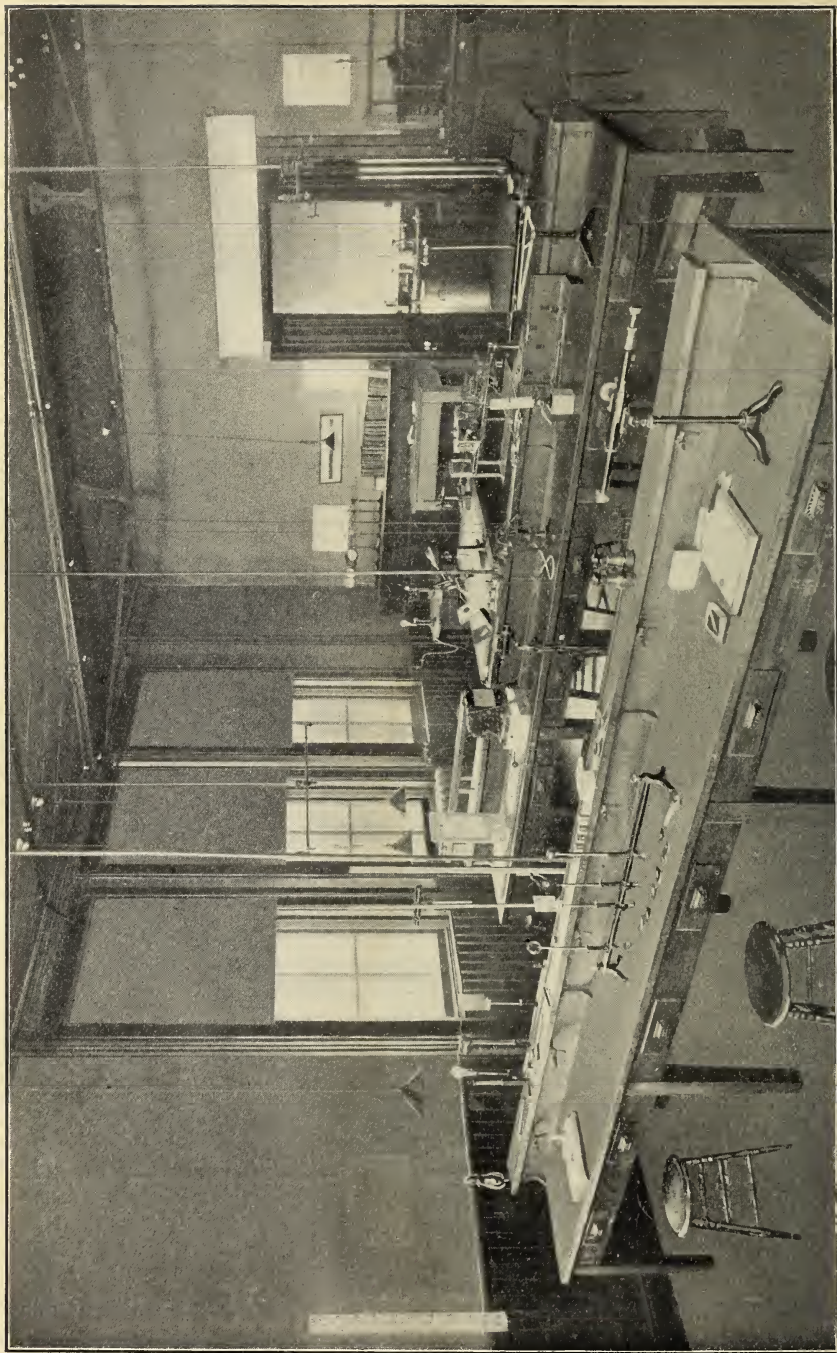
GALVANOMETER LABORATORY.



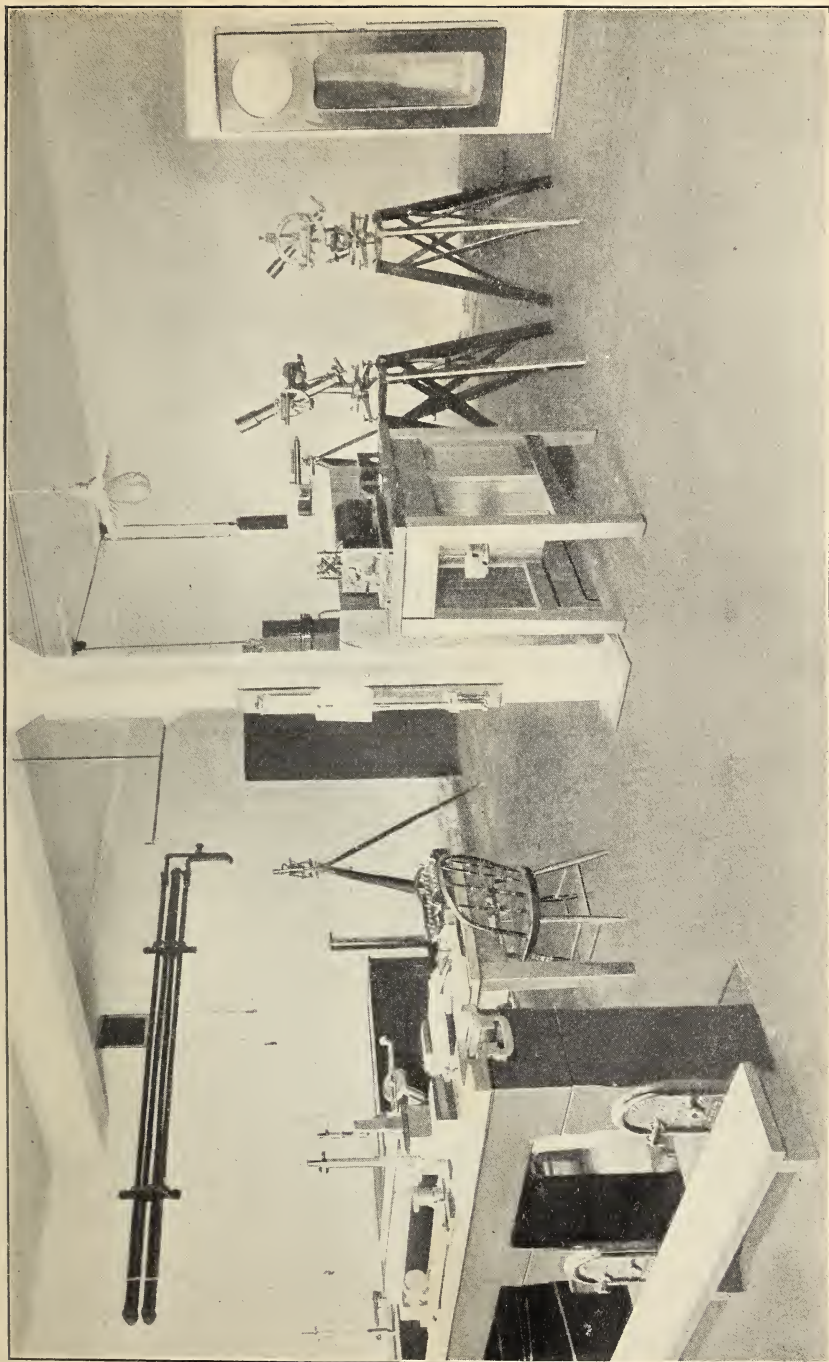
PORTION OF DYNAMO LABORATORY.



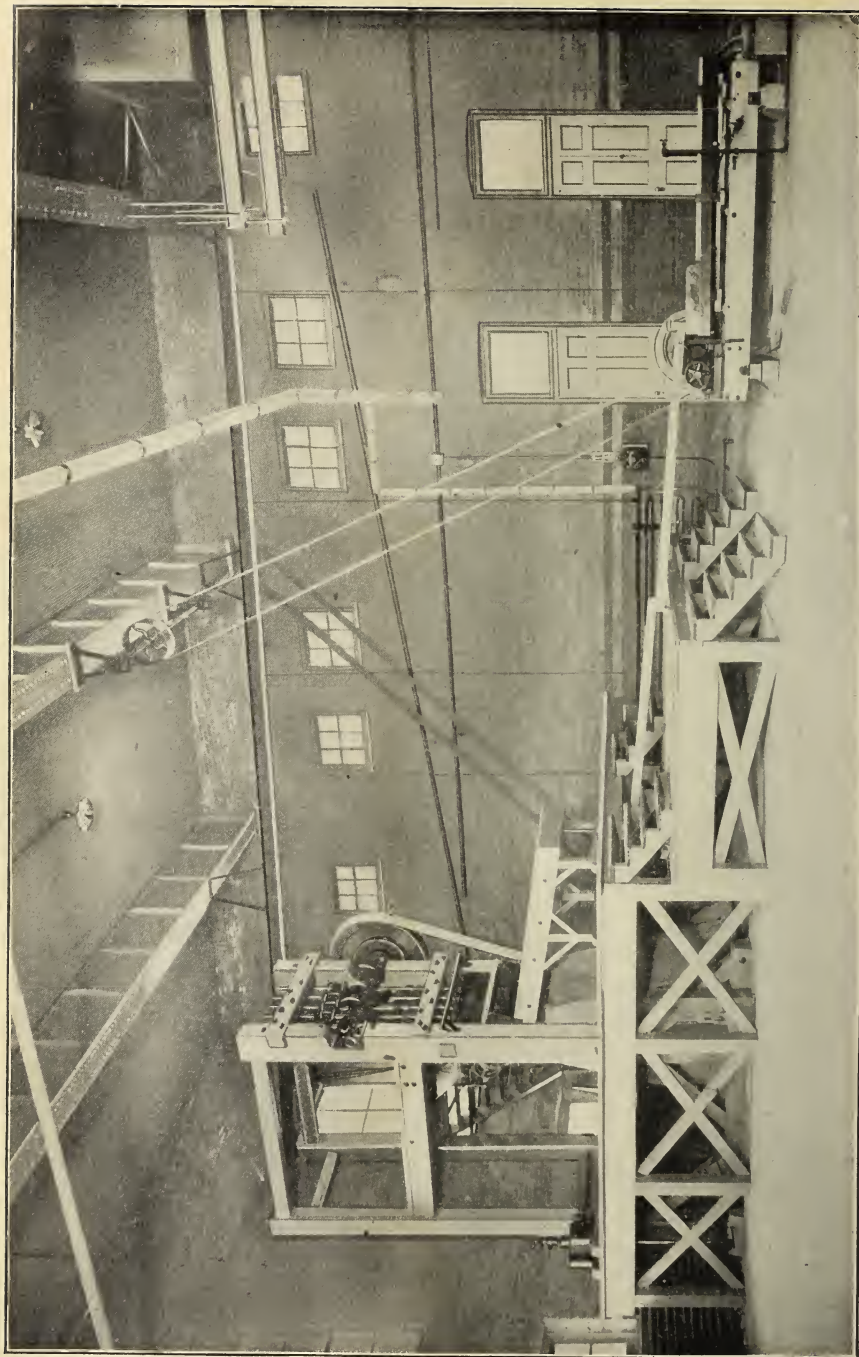
FIRST YEAR DRAFTING ROOM



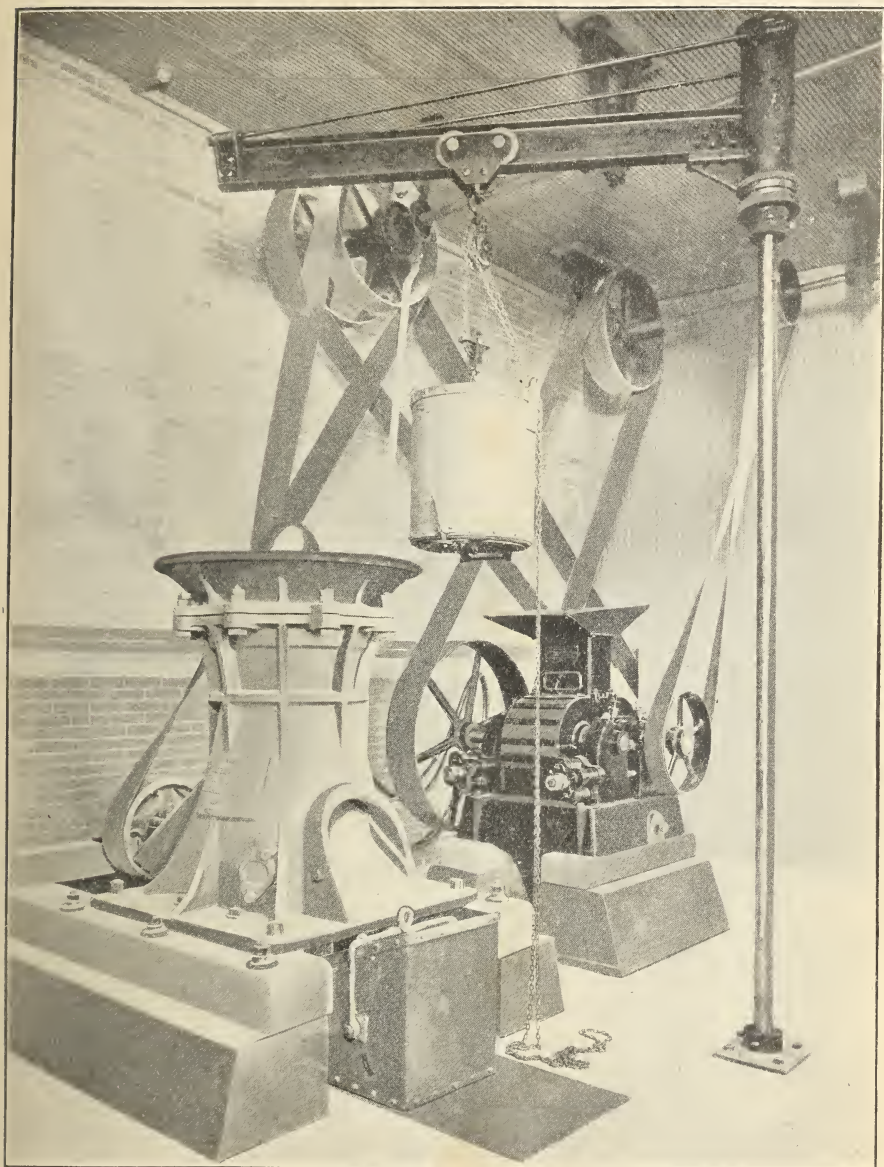
OPTICAL LABORATORY.



METROLOGICAL LABORATORY



MILL ROOM.

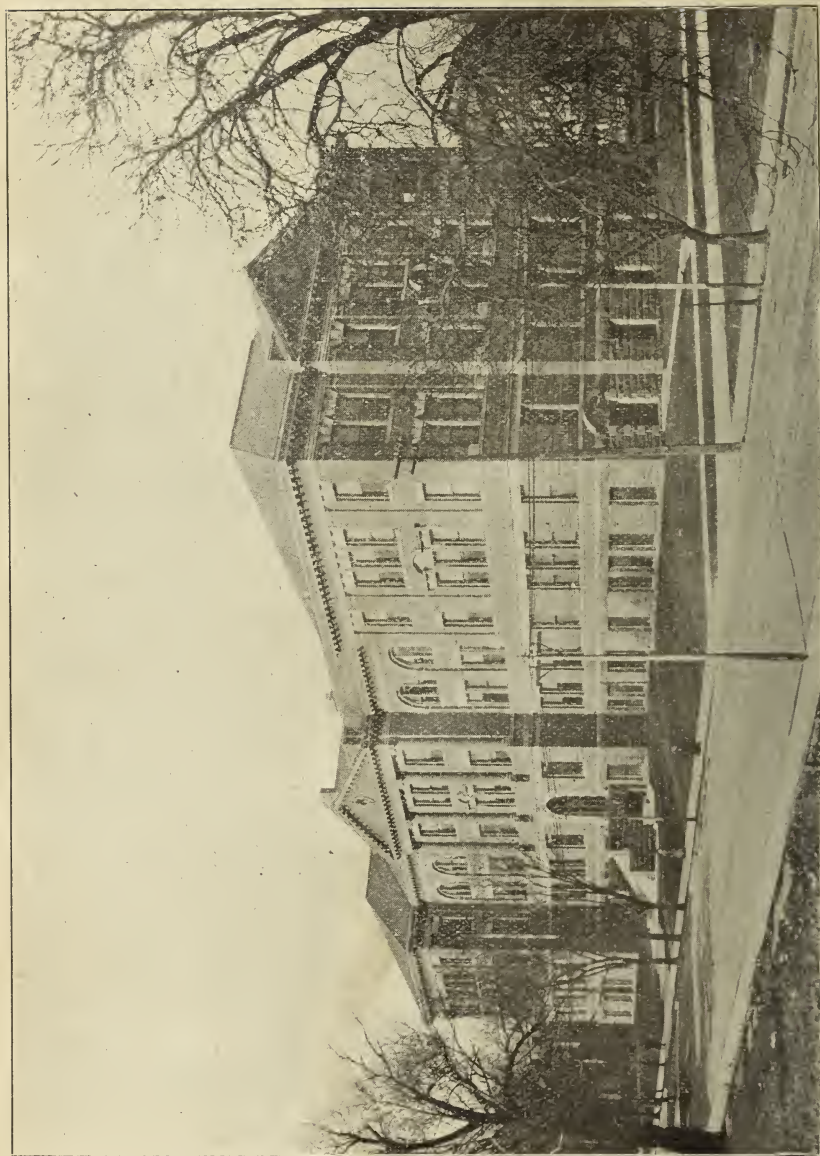


ORE CRUSHERS.





ENGINEERING BUILDING.



CHEMISTRY AND MINING BUILDING.

University of Toronto

Faculty of Applied Science
and Engineering

(ONTARIO SCHOOL OF PRACTICAL SCIENCE)



CALENDAR 1907-1908

TORONTO:
THE UNIVERSITY PRESS

CONTENTS.

	PAGE
CALENDAR.	5
FACULTY.	7
GENERAL DESCRIPTION.	9
DEPARTMENTS.	10
DIPLOMA.	10
ADMISSION.	11
FEES, DEPOSITS, ETC.	11
LODGING AND BOARD.	12
FELLOWSHIPS.	12
REGULATIONS.	13
SUPPLEMENTAL EXAMINATIONS.	14
VACATION WORK.	15
EXEMPTIONS.	14
PRIZES AND HONOURS.	15
REGULAR EXAMINATIONS.	15
DEPARTMENT OF CIVIL ENGINEERING.	18
" MINING ENGINEERING.	20
" MECHANICAL AND ELECTRICAL ENGINEERING.	23
" ARCHITECTURE.	25
" ANALYTICAL AND APPLIED CHEMISTRY.	28
" CHEMICAL ENGINEERING.	29
FOURTH YEAR.	31
DEGREE OF B.A.SC.	33
PROFESSIONAL DEGREES.	33
ACT RESPECTING DOMINION, ONTARIO AND MANITOBA LAND	
SURVEYORS.	35
ONTARIO ARCHITECTS' ACT.	37
SUBJECTS OF INSTRUCTION AND TEXT BOOKS.	38
THERMODYNAMIC LABORATORY.	47
HYDRAULIC "	48
STRENGTH OF MATERIALS LABORATORY.	49
CEMENT TESTING LABORATORY.	49
METROLOGICAL "	49
ELECTRICAL "	50
MINERALOGICAL LABORATORY.	50
ASSAYING "	51
MILL ROOM "	52
PHYSICAL "	52
CHEMICAL "	53
MUSEUMS.	54
LIBRARY.	54
ENGINEERING SOCIETY.	56

	PAGE
ATHLETIC CLUBS.	56
2ND FIELD CO. OF ENGINEERS.	58
GYMNASIUM.	59
FACULTY OF APPLIED SCIENCE, Y.M.C.A.	60
STUDENTS IN ATTENDANCE.	61
PRIZEMEN.	68
GRADUATES IN APPLIED SCIENCE.	70
" CIVIL ENGINEERING.	73
" MINING ENGINEERING.	73
" MECHANICAL ENGINEERING.	73
" ELECTRICAL ENGINEERING.	73
GRADUATES OF SCHOOL OF PRACTICAL SCIENCE.	74
CERTIFICATES.	108
INDEX TO GRADUATES.	109

CALENDAR 1907-1908.

1907. Sept. 23 Meeting of Faculty Council.
24 Supplemental Examinations begin.
27 Registration of students begins.
- Oct. 1 First Term begins.
Lectures and Practical Work begin.
Last day for presentation of Vacation work.
4 Meeting of Council.
9 Meeting of Engineering Society.
23 Meeting of Engineering Society.
- Nov. 1 Meeting of Council.
6 Meeting of Engineering Society.
20 Meeting of Engineering Society.
- Dec. 4 Meeting of Engineering Society.
6 Meeting of Council.
20 First Term ends.
1908. Jan. 6 Second term begins.
10 Meeting of Council.
15 Meeting of Engineering Society.
29 Meeting of Engineering Society.
- Feb. 7 Meeting of Council.
12 Meeting of Engineering Society.
26 Meeting of Engineering Society.
- Mar. 4 Ash Wednesday—Building closed.
6 Meeting of Council.
11 Meeting of Engineering Society.
13 Annual Elections of Engineering Society.
20 Last day for presentation of thesis for B.A.Sc.
25 Annual Meeting of Engineering Society.
- April 3 Meeting of Council.
7 Lectures and practical work close.
13 Annual Examinations begin.
17 Good Friday—Building closed.
- May 4 Meeting of Board of Examiners.
10 Meeting of Council.
- June 12 Annual commencement.

The buildings will be closed on all public holidays, and daily at noon during July and August.

CALENDAR, 1907.

JANUARY.							FEBRUARY.							MARCH.						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
..	..	1	2	3	4	5	..	..	..	..	..	1	2	..	..	..	..	..	1	2
6	7	8	9	10	11	12	3	4	5	6	7	8	9	3	4	5	6	7	8	9
13	14	15	16	17	18	19	10	11	12	13	14	15	16	10	11	12	13	14	15	16
20	21	22	23	24	25	26	17	18	19	20	21	22	23	17	18	19	20	21	22	23
27	28	29	30	31	..	..	24	25	26	27	28	..	..	24	25	26	27	28	29	30
..	..	..	..	..	..	..	..	..	..	..	..	..	..	31	..	..	..	..	..	..
APRIL.							MAY.							JUNE.						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
..	1	2	3	4	5	6	..	..	..	1	2	3	4	..	..	..	..	..	..	1
7	8	9	10	11	12	13	5	6	7	8	9	10	11	2	3	4	5	6	7	8
14	15	16	17	18	19	20	12	13	14	15	16	17	18	9	10	11	12	13	14	15
21	22	23	24	25	26	27	19	20	21	22	23	24	25	16	17	18	19	20	21	22
28	29	30	..	..	..	..	26	27	28	29	30	31	..	23	24	25	26	27	28	29
..	..	..	..	..	..	..	..	..	..	..	..	..	..	30	..	..	..	..	..	..
JULY.							AUGUST.							SEPTEMBER.						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
..	1	2	3	4	5	6	..	..	..	1	2	3	4	1	2	3	4	5	6	7
7	8	9	10	11	12	13	4	5	6	7	8	9	10	8	9	10	11	12	13	14
14	15	16	17	18	19	20	11	12	13	14	15	16	17	15	16	17	18	19	20	21
21	22	23	24	25	26	27	18	19	20	21	22	23	24	22	23	24	25	26	27	28
28	29	30	31	..	..	..	25	26	27	28	29	30	31	29	30	..	..	..	..	..
..
OCTOBER.							NOVEMBER.							DECEMBER.						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
..	..	1	2	3	4	5	..	..	..	..	..	1	2	1	2	3	4	5	6	7
6	7	8	9	10	11	12	3	4	5	6	7	8	9	8	9	10	11	12	13	14
13	14	15	16	17	18	19	10	11	12	13	14	15	16	15	16	17	18	19	20	21
20	21	22	23	24	25	26	17	18	19	20	21	22	23	22	23	24	25	26	27	28
27	28	29	30	31	..	..	24	25	26	27	28	29	30	29	30	31	..	..	..	..
..

CALENDAR, 1908.

[illegible]

University of Toronto.

FACULTY OF APPLIED SCIENCE AND ENGINEERING.

President..... MAURICE HUTTON, M.A., LL.D. (*pro tempore*).

Dean of Faculty..... J. GALBRAITH, M.A., LL.D.

Secretary of Faculty..... A. T. LAING, B.A.Sc.

Bursar..... F. A. MOURÉ, Esq.

F. B. ALLAN, M.A., PH.D..... *Lecturer in Chemistry.*

R. W. ANGUS, B.A.Sc..... *Professor of Mechanical Engineering.*

G. R. ANDERSON, M.A..... *Lecturer in Physics.*

E. G. R. ARDAGH, B.A.Sc..... *Lecturer in Chemistry.*

J. W. BAIN, B.A.Sc..... *Associate Prof. of Applied Chemistry.*

ALFRED BAKER, M.A..... *Professor of Mathematics.*

W. BARBER, B.A.Sc..... *Demonstrator in Strength of Materials.*

F. BARBER, GRAD. S.P.S..... *Fellow in Elec. Engineering.*

B. A. BENSLEY, B.A..... *Associate Professor of Zoology.*

W. C. BLACKWOOD, GRAD. S.P.S.... *Fellow in Physics.*

M. C. BOSWELL, M.A., PH.D..... *Lecturer in Chemistry.*

T. W. BROWN, GRAD. S.P.S..... *Fellow in Surveying.*

C. A. CHANT, M.A., PH.D..... *Lecturer in Physics.*

J. R. COCKBURN, B.A.Sc..... *Lecturer in Descriptive Geometry.*

A. P. COLEMAN, M.A., PH.D..... *Professor of Geology.*

S. R. CRERAR, B.A.Sc..... *Demonstrator in Surveying.*

A. G. CREIGHTON, GRAD. S.P.S.... *Fellow in Drawing.*

S. DUSHMAN, B.A..... *Demonstrator in Chemistry.*

W. HODGSON ELLIS, M.A., M.B.... *Professor of Applied Chemistry.*

J. H. FAULL, B.A..... *Lecturer in Botany.*

S. L. FEAR, GRAD. S.P.S..... *Fellow in Drawing.*

G. H. FERGUSON, B.A.Sc..... *Fellow in Surveying.*

J. C. FIELDS, B.A., PH.D..... *Associate Professor of Mathematics.*

H. S. FIERHELLER, B.A.Sc..... *Demonstrator in Elec. Engineering.*

C. C. FORWARD, GRAD. S.P.S..... *Fellow in Chemistry.*

E. L. C. FORSTER, B.A..... *Fellow in Chemistry.*

J. GALBRAITH, M.A., LL.D..... *Professor of Engineering.*

P. GILLESPIE, B.A.Sc..... *Lecturer in Theory of Construction.*

W. W. GRAY, B.A.Sc..... *Demonstrator in Thermodynamics.*

W. F. GREEN, B.A..... *Assistant in Mineralogy.*

W. HUBER, GRAD. S.P.S..... *Fellow in Drawing.*

J. D. KIPPY, GRAD. S.P.S..... *Fellow in Drawing.*

H. M. LANCASTER, B.A.Sc..... *Fellow in Chemistry.*

- T. R. LOUDON, B.A.Sc. *Demonstrator in Drawing.*
 J. MCGOWAN, B.A. *Assoc. Professor of Applied Mechanics.*
 M. A. MCKENZIE, M.A. *Assoc. Professor of Mathematics.*
 W. MCKINNON, GRAD. S.P.S. *Fellow in Drawing.*
 N. B. MCLEAN, B.A. *Fellow in Mathematics.*
 G. R. MICKLE, B.A. *Professor of Mining.*
 W. L. MILLER, B.A., PH.D. *Assoc. Professor of Physical Chemistry.*
 W. A. PARKS, B.A., PH.D. *Lecturer in Mineralogy.*
 A. L. PARSONS, B.A. *Lecturer in Mineralogy.*
 G. W. PATERSON, GRAD. S.P.S. *Fellow in Elect. Engineering.*
 H. W. PRICE, B.A.Sc. *Lecturer in Electrical Engineering.*
 M. R. RIDDELL, B.A.Sc. *Lecturer in Mechanical Engineering.*
 T. R. ROSEBRUGH, M.A. *Professor of Elect. Engineering.*
 T. E. ROTHWELL, GRAD. S.P.S. *Fellow in Chemistry.*
 L. B. STEWART, O.L.S., D.T.S. *Professor of Surveying and Geodesy.*
 H. G. SMITH, B.A.Sc. *Demonstrator in Elect. Engineering.*
 J. J. TRAILL, B.A.Sc. *Demonstrator in Hydraulics.*
 W. M. TREADGOLD, B.A. *Lecturer in Surveying.*
 A. E. UREN, GRAD. S.P.S. *Fellow in Drawing.*
 E. WADE, B.A. *Demonstrator in Mining.*
 T. L. WALKER, M.A., PH.D. *Professor of Mineralogy and Petrography.*
 C. H. C. WRIGHT, B.A.Sc., MEM.
 O.A.A. *Professor of Architecture.*

The School of Practical Science.

PROVINCE OF ONTARIO.

CALENDAR FOR THE SESSION 1907-1908.

The Legislative Assembly during the Session of 1877 gave its sanction to the establishment of a School of Practical Science on the basis proposed in the memorandum of the Minister of Education confirmed by the Lieutenant-Governor in Council on the 3rd day of February, 1877.

By the scheme thus approved of, the Government effected an arrangement with the Council of University College whereby the students of the School of Practical Science enjoyed full advantage of the instruction given by its professors and lecturers in all the departments of science which were embraced in the work of the School.

This arrangement was brought to an end in 1889 by the transfer of the department of science above referred to, from University College to the University of Toronto under the operation of the University Federation Act.

In order that the students of the School might continue to enjoy the advantage of the instruction of the above departments, the Senate of the University of Toronto passed a Statute in October, 1889, affiliating the School to the University, which Statute was confirmed by the Lieutenant-Governor on the 30th day of October, 1889.

By an Order-in-Council, approved by the Lieutenant-Governor, on the 6th day of November, 1889, a Principal was appointed, and the management of the School was entrusted to a council composed of the Principal as chairman, and the Professors, Lecturers and Demonstrators appointed on the Teaching Faculty of the School.

By the terms of this order the management and discipline of the School was vested in the Council.

By a Statute of the Senate of the University of Toronto, passed on December 14th, 1900, the teaching staff and examiners of the School of Practical Science, together with the examiners for the degree of B.A.Sc., and professional degrees in Engineering, were constituted ex-officio the Faculty of Applied Science and Engineering of the University of Toronto.

By an Order-in-Council dated the 30th day of January, 1903, the Council of the School was made to consist of the Principal, the Professors and Lecturers, together with the Registrar.

By the University Act, 1906, the School of Practical Science was united to the University of Toronto as its Faculty of Applied Science and Engineering.

DEPARTMENTS.

There are six regular Departments of Instruction, in each of which Diplomas are granted, viz.:—

1. Civil Engineering.
2. Mining Engineering.
3. Mechanical and Electrical Engineering.
4. Architecture.
5. Analytical and Applied Chemistry.
6. Chemical Engineering.

The instruction given in these departments is designed to give the student a thorough knowledge of the scientific principles underlying the practice in the several professions, and also such a training as may make him immediately useful when he commences actual professional work.

DIPLOMA.

The regular course in each department is of three years' duration and leads to the Diploma. The instruction is given partly in the lecture room and partly in the drafting rooms, laboratories and field. A certain amount of work is laid out for the summer vacation. The course of study in each department is general, and beyond the selection of his department the student has no opportunity to specialize.

DEGREE OF B.A.Sc.

After the general course is finished the Diploma is granted and the student is at liberty either to enter the active life of his profession or to spend another year in special work. This year is called the fourth or post-graduate year. Graduates electing to proceed with their studies are allowed to select two subjects from an approved list, and are required to confine their whole attention to these subjects during the fourth year. The subjects in that list are such as require a large amount of time to be devoted to laboratory and other practical work. The advanced theoretical instruction is given either at the beginning or end of the working-day, in order not to break up the time allotted to practical work. During this year the student is required to prepare a thesis on some subject connected with his work. After complying with all requirements, the candidate receives the degree of Bachelor of Applied Science (B.A.Sc.).

PROFESSIONAL DEGREES.

Bachelors of Applied Science may, after three years spent in professional work, present themselves for the degrees of Civil Engineer (C.E.), Mining Engineer (M.E.), Mechanical Engineer (M.E.), or Electrical Engineer (E.E.), as the case may be, subject to the rules and regulations established by the University.

ADMISSION.

Candidates will be admitted as regular students in any of the regular departments of instruction on presenting satisfactory certificates of having passed either:—

(a) The matriculation examination in Arts, in any University in His Majesty's Dominions, or in all the subjects of such matriculation examination except Latin and Greek, provided, however, that if an alternative be allowed by the University between either Latin or Greek and modern subjects (*e.g.*, Modern Languages, Physics, Chemistry, etc.), the latter subjects must be taken if the former are omitted; or

(b) The Junior Teachers' Examination of the Province of Ontario, including either French or German.

The subjects for pass Junior Matriculation are: English Composition, English Literature, English Grammar, Algebra, Euclid, Arithmetic, History (British, Canadian and Ancient), Latin and any two of the following: Greek, French, German, Experimental Science (Physics and Chemistry). A candidate who desires to enter the Faculty of Applied Science as a regular student, without taking Latin or Greek, will be required to present a certificate that he has passed in the following subjects: English Composition, English Literature, English Grammar, Algebra, Euclid, Arithmetic, History (British, Canadian and Ancient), and any two of the following:—French, German and Experimental Science (Physics and Chemistry).

Applications for admission to the regular departments based upon certificates other than those above mentioned will be considered by the Council. Such applications accompanied by the necessary certificates and information, must be in the hands of the Registrar of the Faculty before September 20th.

TUITION FEES.

First Year.	\$70.00
Second Year.	80.00
Third Year.	90.00
Fourth Year.	70.00

The tuition fees may be paid in one amount at the beginning of the session or in two equal instalments, one at the beginning of each term.

A discount of \$5.00 will be allowed if the whole fee is paid on or before November 5th.

A discount of \$2.00 will be allowed on an instalment paid on or before the fifth day of the second month of the term in which it is due.

A penalty of \$1.00 per month will be imposed for fees not paid on or before the first day of the third month of a term.

Examination and Degree Fees.

Fourth Year examination fee.....	\$10.00
Fee for Degree of B.A.Sc.....	10.00

These fees must be paid on or before 1st day of April.

Fees are payable at the office of the Bursar during the hours from 10 A.M. to 1 P.M.

In no case will fees be received on Saturday.

Library Fee and Deposit.

Library fee.	\$1.00
Deposit departments, 1, 2, 3, 4.....	5.00
“ “ 5, 6 in first year.....	5.00
“ “ 5, 6 second, third and fourth year....	9.00

These amounts must be paid to the Secretary of the Faculty at the time of registration.

The total expenses of a regular three years' course in any department is about \$360, which amount includes books, instruments and materials as well as the fees, etc., stated in above table.

Information as to the text books, instruments and materials to be purchased by the students will be given on registration at the beginning of the session.

LODGING AND BOARD.

Accommodation is readily obtainable in numerous private boarding-houses within convenient distance of the University, at a cost of from three dollars and a half upwards for comfortable lodging with board; or rooms may be rented at a cost of from one dollar and a half per week upwards, and board obtained separately at moderate rates. A list of accredited boarding-houses is kept by the Secretary of the University College Young Men's Christian Association, and students are recommended to consult him with reference to the selection of suitable accommodation.

FELLOWSHIPS.

Fellowships of the value of \$500 each are awarded annually in the various departments. Each fellow is appointed annually and is eligible for re-appointment for a period not exceeding in all three years.

The fellows are required to take such portions of the work of instruction as may be assigned to them by the Council.

Application for these fellowships are to be made annually to the Secretary of the Faculty on or before the 1st day of May.

REGULATIONS RESPECTING STUDENTS AND EXAMINATIONS.

No student will be enrolled in any year, or be allowed to continue in attendance, whose presence for any cause is deemed by the Council to be prejudicial to the interests of the University.

All interference on the part of any student with the personal liberty of another, by arresting him, or summoning him to appear before any tribunal of students, or otherwise subjecting him to any indignity or personal violence, is forbidden by the Council. In particular, students of all Faculties are warned against the practices known as the "hustling" of freshmen and against inter-year or inter-faculty "hustles." Any student convicted of participation in such proceedings will render himself liable to expulsion from the University.

All students who are candidates for diplomas or certificates shall be in attendance during the whole of each term, unless exempted by special permission of the Council. The term will not be allowed to any student who has attended less than three-fourths of the required lectures and practical work, or who has been reported to the Council for bad conduct and adjudged guilty thereof.

Candidates are required to send to the Secretary of the Faculty at least three weeks before the commencement of the Annual Examinations in April, and the Supplemental Examinations in September, notice in writing of their intention to take such examinations.

No student will be allowed to write at the Annual Examinations who has not paid all fees and dues for which he is liable.

The minimum percentage of marks required to pass in the written examinations will be fixed from time to time by the Council.

The minimum percentage of marks required to pass in the practical work connected with any subject shall be one and one-half times the minimum required in the case of a written examination.

In order to pass in subjects wherein both written and practical examinations are held, the candidate must pass in both examinations.

In order to pass the practical examinations in the subjects of applied mechanics, descriptive geometry, surveying and architecture, the drawings set in the lectures on these subjects must be made.

Drawings prescribed for the first term of the session will not be counted unless finished in that term.

To pass in drawing, the drawings already referred to must be made, together with as many others as may be prescribed.

The number of practice sheets to be made by each student will depend upon his progress.

The minimum number of drawings shall be twenty-five, and the maximum number thirty-five, except in the Department of Analytical and Applied Chemistry, in which the number shall be fifteen and twenty-five respectively.

The minimum percentage of marks prescribed for practical work must be obtained in drawing.

The drawings must be made on paper 15 in. x 22 in., unless otherwise prescribed.

The Council reserves the right of disposing of the drawings as they may think proper. No drawings may be removed from the school without permission.

No drawings will be counted which have not been made in the drafting rooms, and during the hours allotted to such work.

To pass in Surveying the minimum percentage required for practical work must be obtained in the field work.

No field notes will be counted which have not been taken in the field, and during the hours allotted to such work.

Students taking practical astronomy are required to take observations in the field for time, latitude, and azimuth.

In order to pass in any branch of practical work at least 50 per cent. of the marks allotted to that work must be obtained in each term.

EXEMPTIONS.

Applications for exemption from any of the regulations of the School must be made to the Council in writing and the particulars of the case fully stated.

SUPPLEMENTAL EXAMINATIONS, ETC.

A candidate who fails in one or two subjects at the annual examinations, will be required to take supplemental examinations in such subjects.

The supplemental written examinations will begin on the 24th of September, 1907.

No candidate will be allowed to enter the Fourth Year who has not passed his supplemental examinations.

In the case where a candidate fails to pass a supplemental examination it will count as one of the two supplemental examinations which may be allowed him after the next annual examination.

Candidates who fail in being promoted to a higher year or in graduating will be required to take again the whole course of instruction, both theoretical and practical, of the year in which they fail before presenting themselves a second time for examination.

The fees to be paid by a student repeating a year will be the regular fees for such year.

Students are required to spend the hours of every working day between 9 a.m. and 5 p.m. at the work laid down in the time-table.

VACATION WORK.

Vacation work must be handed in on or before the first day of the session.

Vacation notes must be on construction only, and contain not less than twenty, nor more than thirty pages of sketches. These sketches must be free-hand pencil drawings with figured dimensions.

No notes, whether taken during the session of the vacation, will be counted unless made in the standard note books of the School.

The minimum percentage of marks required for practical work must be made in the case of vacation notes.

PRIZE.

Through the liberality of Mr. T. Kennard Thomson, C.E., of New York, a prize of \$10 in books has been established in the department of Civil Engineering for general proficiency in the Third Year.

HONOURS.

Honours will be granted in each department to the students who pass in all the subjects and obtain at least 66 per cent. of the total number of marks allotted to the department at the annual examinations.

Papers read before the Engineering Society may be considered in granting Honours.

The Honour list is arranged alphabetically.

REGULAR EXAMINATIONS.

(APPROXIMATE LIST.)

I. YEAR.**Examinations Held at the End of the Session.**

Algebra.	Mineralogy.	1,2,4,5,6.
Plane Trigonometry.	History of Architecture.	4.
Analytical Geometry.	Electricity.	3.
Descriptive Geometry	Magnetism and Electricity.	3.
Surveying.	Statics.	1,2,3,4,6.
Chemistry, Elementary.	Dynamics.	1,2,3,4,6.
Chemistry, Inorganic.		5,6.

- | | |
|--------------------------------------|---|
| 1. Civil Engineering. | 3. Mechanical and Electrical Engineering. |
| 2. Mining Engineering. | 4. Architecture. |
| 5. Analytical and Applied Chemistry. | 6. Chemical Engineering. |

Examinations Held During the Session.

Drawing.	
Field Notes.	1,2,4.
Architectural Sketches.	4.
Practical Electricity.	3.
Practical Chemistry.	
Practical Mineralogy.	1,2,4,5,6.
German.	5.

II. YEAR.**Examinations Held at the End of the Session.**

Calculus.	1,2,3,4,6.	Metallurgy.	
Astronomy.	1.	Chemistry, Inorganic.	5,6.
Optics.		Chemistry, Organic.	5,6.
Strength of Materials.	1,2,3,4,6.	Chemistry, Physical.	5,6.
Dynamics.	1,2,3.	Chemistry Applied.	
Theory of Mechanism.	3.	do do	5,6.
Hydrostatics.		Electricity.	3,5,6.
History of Architecture.	4.	Descriptive Geometry.	1,2,3,4,6.
Orders of Architecture.	4.	Surveying.	1,2,4.
History of Ornament.	4.	Spherical Trigonometry.	1,2,3.
Lithology.	2,4.	Geology.	1,2,5.

Examinations Held During the Session.

Drawing.	1,2,3,4,6.
Field Notes.	1,2.
Construction Notes.	1,2,3,4,6.
Architectural Sketches.	4.
Experimental Physics.	
Practical Electricity.	3,5,6.
Practical Chemistry (qualitative).	1,2,3,4,6.
Practical Chemistry (quantitative).	2,5,6.
Practical Mineralogy.	1,2,5.
Practical Lithology.	2,4.
German.	5.

- | | |
|--------------------------------------|---|
| 1. Civil Engineering. | 3. Mechanical and Electrical Engineering. |
| 2. Mining Engineering. | 4. Architecture. |
| 5. Analytical and Applied Chemistry. | 6. Chemical Engineering. |

III. YEAR.

Examinations Held at the End of the Session.

Magnetism and Electricity...3, 3 ¹ .	Theory of Construction...1,2,3,4,6.
Electricity.1,2,4,5,6.	Mechanics of Machinery.....3,3 ¹ .
Alternating Current.....3,3 ¹ .	Machine Design.....3,3 ¹ ,6.
Electrical Design.....3 ¹ .	Hydraulics.1,2,3,3 ¹ .
History of Architecture.....4.	Thermodynamics.1,2,3,3 ¹ ,6.
History of Ornament.....4.	Heat Engines.3.
Principles of Decoration.....4.	Descriptive Geometry.....1,4.
Elements of Design.....4.	Electrochemistry.3 ¹ ,5,6.
Method of Least Squares.....1.	Practical Astronomy and
Chemistry, Organic.....5.	Geodesy.1.
Chemistry, Applied.	Surveying and Levelling....1,2,4.
Analytical Chemistry.....2,5,6.	Metallurgy.2,5,6.
Sanitary Plumbing, Heating and	Mining and Ore Dressing.....2.
Ventilation.4.	Ore Deposits.2.
Theory of Compound Stress....1.	Mill Design.....3,4.
Economic Geology.....1,2,5.	Biology.5.
	Acoustics.4.

Examinations Held During the Session.

Drawing.	1,2,3,3 ¹ ,4,6.
Field Notes.	1,2.
Construction Notes.	1,2,3,3 ¹ ,4,6.
Architectural Sketches.	4.
Experimental Heat.	1,2,3,3 ¹ .
Experimental Acoustics.	4.
Practical Electricity.	3,3 ¹ .
Practical Electrochemistry.	3 ¹ ,5,6.
Practical Chemistry.	2,5,6.
Practical Biology.	5.
Determinative Mineralogy.	2,5.
Assaying.	2,5.
Crystallography.	2,5.
German.	5,6.

-
- | | |
|--------------------------------------|---|
| 1. Civil Engineering. | 3. Mechanical and Electrical Engineering. |
| 2. Mining Engineering. | 4. Architecture. |
| 5. Analytical and Applied Chemistry. | 6. Chemical Engineering. |

DEPARTMENTS.**CIVIL ENGINEERING.****I. YEAR.****MATHEMATICS.**

Algebra, plane trigonometry.

Analytical plane geometry.

DRAWING.

Copying from the flat, lettering topography.

Graphics.

Descriptive geometry in its application to plane-sided solids, orthographic (including isometric) and oblique projection.

Original surveys.

CHEMISTRY.

General principles of chemistry.

The elements and their compounds.

Laboratory work.

MINERALOGY.

Introductory course.

Laboratory work.

MECHANICS.

Statics and dynamics (with special reference to structures and machines).

SURVEYING.

Field and office work, chain and compass surveys, topography. preliminary instruction in the use of the transit-theodolite, plotting, mensuration.

II. YEAR.**MATHEMATICS.**

Differential and integral calculus.

Spherical trigonometry.

Plane astronomy.

DRAWING.

Subjects of first year continued.

Coloring and shading applied to both topographical and construction drawing.

Descriptive geometry in its application to solids bounded by curved surfaces. Shades and shadows, perspective.

Machines and structures. (Drawings made from both copies and original notes.)

CHEMISTRY.

Heat and its applications.
The materials of construction.
Laboratory work.

MECHANICS.

Statics and dynamics (pure and applied).
Strength and elasticity of materials.

SURVEYING.

Transit-theodolite surveying.
Levelling.
Railway location, curves, etc.
Topographic, hydrographic and mining surveying.

MINERALOGY.

Blowpipe practice.
Determination of minerals.

GEOLOGY.

Elements.

METALLURGY.

Iron and steel.

OPTICS.

Laboratory work.

HYDROSTATICS.

Laboratory work.

VACATION WORK.

Construction Notes.

III. YEAR.

DRAWING.

Subjects of previous years continued.
Descriptive geometry—the various projections of the sphere
and principles of map construction, stone cutting.
Original designs—bridges, roofs, floors, arches, etc.

CHEMISTRY.

Water and air.
Photography.
Explosives.

MECHANICS.

Statics and dynamics (pure and applied).
Strength and elasticity of materials.
Theory of construction.
Practical designs—bridges, roofs, floors, arches, retaining walls,
foundations, etc.
Thermodynamics and theory of the steam engine.
Hydraulics, sewerage, water supply.

SURVEYING.

- Levelling.
- Profiles, cross sections, field work and plotting.
- Computation of quantities.
- Mathematical theory of surveying instruments.
- Trigonometrical and barometrical levelling.
- Geodesy.
- Practical astronomy (treated in the manner required for the
O.L.S. and D.L.S. examinations).
- Least squares.

HEAT.

- Laboratory work.

ELECTRICITY.

- Magnetism and electricity.
- Electrical machinery.
- Power transmission.

GEOLOGY.

- Economic geology.

VACATION WORK.

- Construction Notes.

MINING ENGINEERING.

I. YEAR.

MATHEMATICS.

- Algebra, plane trigonometry.
- Analytical plane geometry.

DRAWING.

- Copying from the flat, lettering, topography.
- Graphics.
- Descriptive geometry in its application to plane-sided solids,
orthographic (including isometric) and oblique projection.

CHEMISTRY.

- General principles of chemistry.
- The elements and their compounds.
- Laboratory work.

MINERALOGY.

- Introductory course.
- Laboratory work.

MECHANICS.

- Statics and dynamics (with special reference to structures and
machines).

SURVEYING.

Field and office work, chain and compass surveys, topography, preliminary instruction in the use of the transit-theodolite, plotting, mensuration.

II. YEAR.

MATHEMATICS.

Differential and integral calculus.
Spherical trigonometry.

DRAWING.

Subjects of the first year continued.
Coloring and shading applied to both topographical and construction drawing.
Descriptive geometry in its application to solids bounded by curved surfaces. Shades and shadows and perspective.
Machines and structures from both copies and original notes.

CHEMISTRY.

Heat and its applications.
The materials of construction.
Laboratory work.

MECHANICS.

Statics and dynamics (pure and applied).
Strength and elasticity of materials.

SURVEYING.

Transit-theodolite surveying.
Levelling.
Railway location, curves, etc.
Topographic, hydrographic and mining surveying.

GEOLOGY.

Elements.

MINERALOGY.

Bloppipe practice.
Determination of minerals.
Lithology

METALLURGY.

Iron and steel.

OPTICS.

Laboratory work.

HYDROSTATICS.

Laboratory work.

VACATION WORK.

Construction Notes.

III. YEAR.

DRAWING.

- Subject of previous years continued.
- Geological maps and sections.
- Mine maps, etc.
- Original designs—bridges, roofs, floors, etc.

CHEMISTRY.

- Water and air.
- Photography.
- Explosives.
- Analytical chemistry.
- Laboratory work.

MECHANICS.

- Statics and dynamics (pure and applied).
- Strength and elasticity of materials.
- Theory of construction.
- Thermodynamics and theory of steam engine.
- Hydraulics.

SURVEYING.

- Levelling.
- Profiles, cross-sections, field work and plotting.
- Computation of quantities.
- Mathematical theory of surveying instruments.
- Trigonometrical and barometrical levelling.

ELECTRICITY.

- Magnetism and electricity.
- Electrical machinery.
- Power transmission.

MINERALOGY AND GEOLOGY.

- Economic geology.
- Palæontology.
- Ore deposits.
- Determinative mineralogy.
- Crystallography.

METALLURGY.

- Metallurgy of gold, silver, nickel, copper, etc.
- Mining and ore dressing.
- Assaying.

HEAT.

- Laboratory work.

VACATION WORK.

- Construction Notes.

MECHANICAL AND ELECTRICAL ENGINEERING.

I. YEAR.

MATHEMATICS.

Algebra, plane trigonometry.

Analytical plane geometry.

DRAWING.

Copying from the flat, lettering, graphics.

Descriptive geometry in its application to plane-sided solids, orthographic (including isometric), and oblique projection.

CHEMISTRY.

General principles of chemistry.

The elements and their compounds.

Laboratory work.

MECHANICS.

Statics and dynamics (with special reference to structures and machines).

SURVEYING.

Application of trigonometry and principles of measurement (lectures only).

ELECTRICITY.

Magnetism, electrostatics.

Electromagnetism, current electricity.

Wiring and distribution.

Introductory laboratory course.

II. YEAR.

MATHEMATICS.

Differential and integral calculus.

Spherical trigonometry.

DRAWING.

Subjects of previous year continued.

Coloring and shading applied in constructive drawing.

Descriptive geometry in its application to solids bounded by curved surfaces, shades, shadows and perspective.

Machines and structures (drawings made from both copies and original notes).

CHEMISTRY.

Heat and its applications.

The materials of construction.

Laboratory work.

MECHANICS.

Statics and dynamics (pure and applied).

Theory of mechanism.

Strength and elasticity of materials.

Materials of construction.

METALLURGY.

Iron and steel.

OPTICS.

Laboratory work.

HYDROSTATICS.

Laboratory work.

ELECTRICITY.

Electrical measurements, lectures and laboratory work.

VACATION WORK.

Construction Notes.

III. YEAR.

In this year an option is allowed between Theory of Heat Engines and Mill Building Design on the one hand, and Alternating Current, Electrical Design and Electrochemistry on the other. The former is denoted in the time table and elsewhere by 3 and the latter by 3¹.

DRAWING.

Subjects of previous year continued.

Original designs.

CHEMISTRY.

Water and air.

Photography.

Explosives.

ELECTROCHEMISTRY.

Lectures and laboratory work.

MECHANICS.

Subjects of previous year continued.

Applied mechanics.

Mechanics of machinery, machine design, thermodynamics and theory of steam engine, theory of heat engines, hydraulics.

Application of principles to practical problems connected with the design, construction and testing of various prime motors and machines.

Mill building design.

ELECTRICITY.

Lectures and practical work on electromagnetism, applied electromagnetism.

Direct and alternating current.

Dynamo-electric machinery.

Armature windings.

Electrical design.

ORIGINAL DESIGNS.

Engine and machine design.

HEAT.

Laboratory work.

VACATION WORK.

Construction Notes.

SHOPWORK.

In addition to taking the regular course of instruction and passing the requisite examinations, a candidate for the diploma in Mechanical and Electrical Engineering will be required to present satisfactory evidence of having had at least eight months' good practical experience in one of the principal trades connected with mechanical work, such as machinist, pattern-maker, moulder, steam engineer, etc. There is no restriction as to the place where the candidate may have gained such practical experience.

ARCHITECTURE.

I. YEAR.

MATHEMATICS.

Algebra, plane trigonometry.

Analytical plane geometry.

DRAWING.

Copying from the flat, lettering, topography, graphics.

Descriptive geometry in its application to plane-sided solids, orthographic (including isometrie) and oblique projection.

Rendering in pencil, and pen and ink.

CHEMISTRY.

General principles of chemistry.

The elements and their compounds.

Laboratory work.

MECHANICS

Statics (with reference to structures).

Dynamics (preliminary to the study of hydraulics).

SURVEYING.

Principles, chain surveying, mensuration.

MINERALOGY.

Introductory course.

Laboratory work.

HISTORY OF ARCHITECTURE.

General introduction.

Ancient architecture.

Egyptian, Assyrian and Persian.

II. YEAR.

MATHEMATICS.

Differential and integral calculus.

DRAWING.

Instrumental drawing, drawing from the cast, sketching and water color, pen and ink.

Descriptive geometry (curved surfaces).

Shades and shadows and perspective.

CHEMISTRY.

Heat and its applications.

The materials of construction.

Laboratory work.

MECHANICS.

Statics (pure and applied).

Strength and elasticity of materials.

Materials of construction.

SURVEYING.

Use of transit and level.

Mensuration.

LITHOLOGY.

Laboratory work.

METALLURGY.

Iron and steel.

Elementary course.

OPTICS.

Laboratory work.

HYDROSTATICS.

Laboratory work.

HISTORY OF ARCHITECTURE.

Greek and Roman.

Romanesque and Byzantine.

ORDERS AND ELEMENTS OF ARCHITECTURE.

Principles of planning.

HISTORY OF ORNAMENT.

Ancient.

Classic—Greek, Roman.

VACATION WORK.

Construction Notes.

III. YEAR.

DRAWING.

Descriptive geometry.

Advanced perspective, stone cutting.

Water colour sketching.

Original designs—floors, trusses, arches, etc.

CHEMISTRY.

Water and air.

Photography.

Explosives.

THEORY OF CONSTRUCTION.

Hydraulics.

Mill building design.

SANITARY SCIENCE.

House drainage and plumbing.

Ventilation and heating.

SURVEYING.

Levelling, setting out excavation, mensuration.

ELECTRICITY.

Magnetism and electricity.

Electrical machinery.

Power transmission.

ACOUSTICS.

Laboratory work.

HISTORY OF ARCHITECTURE.

Gothic and Renaissance, with special reference to England.

ELEMENTS OF DESIGN.

Principles of planning with special reference to residences.

Relation between plan and elevations.

HISTORY OF ORNAMENT.

Early Christian: Gothic and Renaissance.

PRINCIPLES OF DECORATION.

VACATION WORK.

Construction Notes.

ANALYTICAL AND APPLIED CHEMISTRY.

I. YEAR.

MATHEMATICS.

Algebra, plane trigonometry.
Analytical plane geometry.

DRAWING.

Copying from the flat, lettering.
Model drawing.

CHEMISTRY.

General principles of chemistry.
The elements and their compounds.
Inorganic chemistry.
Laboratory work.

MINERALOGY.

Introductory course.
Laboratory work.

GERMAN.

II. YEAR.

CHEMISTRY.

Heat and its applications.
The materials of construction.
Chemical manufactures.
Organic chemistry.
Elementary physical chemistry.
Laboratory work in quantitative and qualitative analysis.

MINERALOGY.

Blowpipe practice.
Determination of minerals.

GEOLOGY.

Physical geography, palæontology and geology.

METALLURGY.

Iron and steel.

OPTICS.

Laboratory work.

HYDROSTATICS.

Laboratory work.

ELECTRICITY.

Electrical measurements, lectures and laboratory work.

GERMAN.

III. YEAR.

CHEMISTRY.

Water and air.
Photography.
Explosives.
Chemical manufactures.
Organic chemistry.
Electrochemistry.
Analytical chemistry.
Laboratory work.

ELECTRICITY.

Magnetism and electricity.
Electrical machinery.
Power transmission.

GEOLOGY.

Economic geology.

MINERALOGY.

Determinative mineralogy.
Crystallography.

METALLURGY.

Gold, silver, nickel, copper, lead.
Assaying.

BIOLOGY.

GERMAN.

CHEMICAL ENGINEERING.

I. YEAR.

MATHEMATICS.

Algebra, plane trigonometry.
Analytical plane geometry.

DRAWING.

Copying from the flat, lettering, graphics.
Descriptive geometry in its application to plane-sided solids,
orthographic (including isometric), and oblique projection.

SURVEYING.

Application of trigonometry and principles of measurement
(lectures only).

MECHANICS.

Statics and dynamics (with special reference to structures and
machines).

CHEMISTRY.

General principles of chemistry.
The elements and their compounds.
Laboratory work.

MINERALOGY.

Introductory course.
Laboratory work.

II. YEAR.**MATHEMATICS.**

Differential and integral calculus.

DRAWING.

Subjects of first year continued.
Coloring and shading applied in construction drawing.
Descriptive geometry in its application to solids bounded by curved surfaces; shades and shadows, and perspective.
Machines and structures. (Drawings made from both copies and original notes).

CHEMISTRY.

Heat and its applications.
The materials of construction.
Chemical manufactures.
Organic chemistry.
Elementary physical chemistry.
Laboratory work.

MECHANICS.

Strength and elasticity of materials.
Materials of construction.

METALLURGY.

Iron and steel.

OPTICS.

Laboratory work.

HYDROSTATICS.

Laboratory work.

ELECTRICITY.

Electrical measurements, lectures and laboratory work.

VACATION WORK.

Construction Notes.

III. YEAR.**DRAWING.**

Subjects of previous year continued.

CHEMISTRY.

Water and air.
Photography.
Explosives.
Chemical manufactures.
Electrochemistry.
Analytical chemistry.
Laboratory work.

METALLURGY.

Gold, silver, nickel, copper, lead.

MECHANICS.

Subjects of previous year continued.
Applied mechanics.
Machine design, thermodynamics and theory of steam engine.
Application of principles to practical problems connected with the design, construction and testing of various prime motors and machines.

ELECTRICITY.

Magnetism and electricity.
Electric machinery.
Power transmission.

ORIGINAL DESIGNS.

Engine and machine design.

GERMAN.**VACATION WORK.**

Construction Notes.

VACATION WORK.

The engineering and architectural students are required to make, during the vacation, full and clear notes of various constructions that may fall under their notice.

The value of the construction notes is taken into account in determining standing at the next annual examination.

THE FOURTH YEAR.

Students who have obtained the diploma given on the completion of the general three years' course in any department or who have fulfilled the conditions for the diploma with the exception of the period of practical work required in the department of Mechanical and Electrical Engineering are recommended to take up the special work of the fourth year leading to the degree of Bachelor of Applied Science.

The fourth year enables students to continue under certain restrictions subjects in which they may be specially interested, thus affording in a measure the advantages of elective studies.

The subjects of the fourth year are arranged in the following groups and subdivisions.

- A. { Astronomy.
Geodesy and Metrology.
- B. { Architecture.
Strength and Elasticity of Materials.
Hydraulics.
Thermodynamics and Theory of Heat Engines.
Applied Electricity.
Electrochemistry.
- C. { Industrial Chemistry.
Sanitary and Forensic Chemistry.
Electrochemistry.
Inorganic and Organic Chemistry.
- D. { Mineralogy and Geology.
Metallurgy and Assaying.
- E. { Forestry.
Biology.

Students are required to pursue a course of study in either French or German during the fourth year and to take the examinations therein.

Candidates are required to notify the Secretary of the Faculty, in writing, at least two weeks before the opening of the session, of the subjects which they have selected. These subjects will be submitted to the Council for approval.

Undergraduates in the Faculty of Arts of fourth year standing in the Honour Department of Chemistry and Mineralogy may be admitted as students of the fourth year in group C.

Undergraduates in the Faculty of Arts of fourth year standing in the Honour Department of Chemistry and Mineralogy and graduates in the Honour Department of Geology and Mineralogy may be admitted as Fourth Year students in Group D. provided that they have previously taken such back work in the Faculty of Applied Science as may be considered necessary by the Council. In order to afford the opportunity for this back work such candidates are required to make application to the Council at least one year in advance.

Each student is required to prepare a thesis on a subject approved by the Council.

The title of the thesis must be sent to the Council for approval before its regular meeting in November.

This thesis must be handed to the Secretary of the Faculty not later than the 20th day of March and shall become the property of the University.

Pass and Honours.

The minimum percentage for pass are as follows:—

TERM WORK:—

Attendance in each laboratory in each term..... 90

Examinations of work in each laboratory in each term.... 50

The examinations in French and German will be included in the term work.

A report of the results of the term work and examinations must be made by the Professor in charge, to the Council at the close of each term.

ANNUAL EXAMINATIONS:—

Each examination. 33

Thesis. 50

The minimum percentages for honours are as follows:—

Term work of the session..... 75

Each of the two subdivisions at the Annual Examinations.. 66

Thesis. 75

The Annual Examinations for the degree shall be held in April and the Supplemental examinations in September.

DEGREE OF BACHELOR OF APPLIED SCIENCE (B.A.Sc.).

Each candidate who has completed the fourth year and who holds the diploma of the Faculty of Applied Science or is of full Fourth Year standing in the Honour Department of Chemistry and Mineralogy or is a graduate in the Honour Department of Geology and Mineralogy will be entitled to receive the degree of Bachelor of Applied Science (B.A.Sc.).

The degree with honours will be conferred on each candidate otherwise eligible who has obtained three honours at the annual examinations.

SUBSEQUENT PROFESSIONAL DEGREES.

The attention of graduates is directed to the following statute, passed by the Senate of the University of Toronto in 1896:—

By the Senate of the University of Toronto.

Be it enacted:

I. That the previous Statutes of the University relating to degrees or diplomas in Engineering be repealed.

- II. That the following degrees be hereby established, viz., Civil Engineer (C.E.), Mining Engineer (M.E.), Mechanical Engineer (M.E.), Electrical Engineer (E.E.).
- III. That the following be the conditions and regulations governing the conferring of the said degrees.
 1. A candidate for one of the said degrees shall hold the diploma of the School of Practical Science and the degree of Bachelor of Applied Science of the University of Toronto, except in the case provided for in clause 11 hereunder.
 2. He shall have spent at least three years after receiving the degree of Bachelor of Applied Science in the actual practice of the branch of engineering wherein he is a candidate for a degree.
 3. Intervals of non-employment or of employment in other branches of engineering shall not be included in the above three years. It shall not be necessary that the several periods requisite to make up the said three years be consecutive.
 4. Satisfactory evidence shall be submitted to the University examiners as to the nature and length of the candidate's professional experience for the purpose of clauses 2 and 3.

The Examiners shall satisfy themselves by oral or written examinations in regard to the candidate's experience and competence.
 5. The candidate shall prepare an original thesis on some engineering subject in the branch in which he wishes a degree; the said thesis to be accompanied by all necessary descriptions, details, drawings, bills of quantities, specifications and estimates.

The candidates may be required at the option of the Examiners to undergo an examination in the subjects of this thesis.
 6. Notice in writing shall be sent to the Secretary not later than the first day of February, informing him of the degree to which the candidate wishes to proceed and of the title of his proposed thesis for the approval of the Senate.
 7. The evidence under clause 4, and the thesis, with accompanying papers, described in clause 5, shall be sent to the Secretary not later than the first day of April.
 8. The candidate shall be required to present himself for examination in the month of April at such time as may be arranged by the Secretary.
 9. The fee for any one of the said degrees shall be twenty dollars, and shall be paid to the Bursar not later than the first day of April.
 10. The thesis, drawings, and other papers submitted under clause 7 shall become the property of the University.
 11. Candidates who graduated from the School of Practical Science before June, 1895, shall not be required to hold the degree of Bachelor of Applied Science.

For the better carrying out of the provisions of the above statute the following statute constituting the Board of Examiners for professional degrees in Engineering was passed by the Senate on December 14th, 1900.

By the Senate of the University of Toronto

Be it enacted:

1. That the Examiners for the degree of Civil Engineer (C.E.), Mining Engineer (M.E.), Mechanical Engineer (M.E.), and Electrical Engineer (E.E.), be appointed at least twelve months in advance of the date of the examinations for which their services are required.
2. That the said Examiners constitute the Board of Examiners for degrees in Engineering.
3. That the members of the Board shall select one of their number to act as chairman within one month from the date of their appointment.
4. That candidates for examination applying to the Registrar for information respecting the nature or details of the examinations for the said degrees, shall be directed by him to communicate with the chairman of the said Board, who shall forward to the candidates either directly or through the Registrar the decision of the Board.
5. That the chairman of the Board shall keep a record book in which he shall enter the minutes of the proceedings of the Board. He shall also keep a file in book form of all correspondence with candidates for examination and other official correspondence; and shall at the close of the examinations transmit to the Secretary a copy of the said minutes and correspondence.
6. That at the close of the examinations, the Board shall forward a report of the results to the Council for transmission to the Senate. The report shall be signed by the Examiners or by the Chairman of the Board on their behalf.
7. That the Secretary shall furnish each Examiner on his appointment with a copy of this statute and a copy of the statute respecting degrees in Engineering.

Extract from the Ontario Act Respecting Land Surveyors and Survey of Lands (R.S.O.).

"26. Any person serving as an apprentice as hereinafter provided, may, with the permission of the Board of Examiners, attend the Ontario School of Practical Science, or any school, college or university, the course of study in which is in the opinion of the Board, sufficiently

similar to that in the Ontario School of Practical Science, for the purpose of taking any course of study which includes any subject required for the final examination for admission to practice as a land surveyor, but the total period of such apprenticeship and of such course of study shall not exceed the period of four years from the date of the articles of apprenticeship as above mentioned, and not less than three years of the said period of four years shall be passed in the actual service of a practising Ontario Land Surveyor.

* * * * *

“28. The privilege of a shortened term of apprenticeship shall also be accorded to any graduate of the Royal Military College at Kingston and of the Ontario School of Practical Science in civil engineering or in mining engineering, or of the McGill College, Montreal, in civil engineering or in mining engineering, and such person shall not be required to pass the preliminary examination hereinbefore required for admission to apprenticeship with a land surveyor, but shall only be required to serve under articles with a practicing land surveyor duly filed as required by section 32 of this Act, during twelve successive months of actual practice, after which, on complying with all the other requirements, he may undergo the examination prescribed by this Act.

“29. Such person at any time during his apprenticeship may, with the permission of the Board of Examiners, attend the Ontario School of Practical Science, or any school, college or university, the course of study in which is, in the opinion of the Board, sufficiently similar to that in the Ontario School of Practical Science, for the purpose of taking any course of study which includes any subject required for the final examination for admission to practice as a land surveyor, but the total period of such apprenticeship, and of such course of study, shall not exceed the period of two years from the date of the articles of apprenticeship as above mentioned, and not less than twelve months of the said period of two years shall be passed in the actual service of a practicing Ontario Land Surveyor.”

Extract from Act Respecting Manitoba Land Surveyors.

“28. (1) The privilege of a shortened term of apprenticeship shall be accorded to graduates of the Royal Military College of Canada and to graduates in civil engineering of the University of McGill College of Montreal, the School of Practical Science of Toronto, the School of Mining at Kingston, and graduates of Manitoba University who have taken first or second class honours in the special course in mathematics; and such graduates shall not be required to pass the preliminary examination hereinbefore prescribed for admission to apprenticeship with a land surveyor, but shall only be required to serve under articles with a practicing land surveyor, duly filed as required by section 24 of this Act,

during twelve successive months of actual practice, of which at least six months shall be actual practice in the field, after which, on complying with the other requirements of this Act, he may undergo the examination for commission to practice prescribed by this Act."

Extract from the Dominion Lands Act.

"Every graduate in surveying of the Royal Military College of Canada, and every person who has followed a regular course of study in all branches of education required by this Act for admission as a Dominion Land Surveyor, through the regular sessions, for at least two years in any college or university where a complete course of theoretical and practical instruction in surveying is organized, and who has thereupon received from such college or university a diploma as civil engineer, shall be exempt from serving three years as aforesaid, and shall be entitled to examination after one year's service under articles with a Dominion land surveyor, at least six months of which service has been in the field, on producing the affidavit required by the next preceding clause as to such service; but it shall rest with the Board to decide whether the course of instruction in such college or university is that required by this clause."

The attention of the candidates for the Diploma of D.T.S. given by the Dominion Board of Examiners, is directed to the facilities afforded for preparation in the School.

Extract from the Ontario Architects' Act.

"Any student who has matriculated in Arts in any University in His Majesty's dominions, or in the Ontario School of Practical Science, shall not be required to pass the preliminary examinations.

"23. Any person who applies for admission to registration as an architect after the coming into force of this Act, shall be not less than twenty-one years of age, shall have served as a student not less than five years with a principal or principals entitled to register under this Act, or with any other principal or principals approved by the Council, and have passed such qualifying examinations as may be required by this Act.

"24 (3) Any person who has graduated from the Ontario School of Practical Science shall be required to serve only three years as a student, one of which three years may be served during the vacation of such school.

"(4) Upon and after the passing of this Act, students shall serve such term as is required to be served by the provisions of this Act, under indenture to be a registered architect, which indenture and any assignment thereof with affidavit of execution thereto attached shall be filed with the Registrar upon payment of such fees as the Council may by regulation direct.

SUBJECTS OF INSTRUCTION.**DRAWING.**

Model drawing, machines and structures, map and topographical drawing, designs and estimates, graphical calculations.

Descriptive geometry, including practical geometry (plane and solids), orthographic, oblique and perspective projections; intersection of surfaces, shades and shadows, stone cutting, theory of mechanism, theory of mapping, etc.

Text Books and Books of Reference.

Church—Descriptive Geometry.

Davidson—Projections.

Millar—Descriptive Geometry.

MacCord—Lessons in Mechanical Drawing.

Reinhardt—Lettering for Draughtsmen, Engineers and Students.

Worthen—Topographical Drawing.

SURVEYING AND LEVELLING.**LAND SURVEYING.**

Chain Surveys.

Compass and theodolite surveys.

Method of keeping field notes.

Determination of heights and distances.

Plotting.

LEVELLING.

Longitudinal and cross sections.

Plotting.

SETTING OUT.

Setting out straight lines and curves.

Setting out levels.

MENSURATION.

Lines, surfaces and solids.

Timber, masonry, iron and earthwork.

Capacity of reservoirs, etc.

Lectures are also given on the distinctive features of Mining and Hydrographic Surveying.

Text Books and Books of Reference.

Brough—Mine Surveying.

Gillespie—Higher Surveying.

Gillespie—Land Surveying and Direct Levelling.

Henck or Searle—Railway Curves.

Johnson—Theory and Practice of Surveying.

Murray—Manual of Land Surveying.

PRACTICAL ASTRONOMY AND GEODESY.**ORDINARY COURSE.**

The work included in this course is sufficient to fulfil the requirements of the final examination for Ontario and Dominion land surveyors.

In astronomy the principal subjects are the determination of time, latitude and azimuth, and the general principles of the method of determining longitude. Practical instruction is given in the methods of taking observations.

In geodesy all surveys, computations and methods of map construction are based upon the requirements of secondary triangulation.

ADVANCED COURSE (Fourth Year).

The work of this course is intended to fulfil the requirements of the final examinations for Dominion Topographical Surveyors. It is distinguished from the work of the ordinary course not so much by the subjects as by the degree of refinement to which the investigations are carried.

In geodesy the requirements of primary triangulation are kept in view.

Text Books and Books of Reference.

Chauvenet—Spherical and Practical Astronomy.

Doolittle—Practical Astronomy.

Gillespie—Higher Surveying.

Gore—Elements of Geodesy.

Green—Spherical and Practical Astronomy.

Helmert—Hohere Geodasie.

Nautical Almanac, 1908.

APPLIED MECHANICS.**STATICS.**

The calculation of the stresses in framed structures, solid and riveted beams, arches, etc. Both graphical and analytical methods used.

THEORY OF THE STRENGTH AND ELASTICITY OF MATERIALS.**THEORY OF COMPOUND STRESS.**

DESIGN OF STRUCTURES in timber, iron and masonry—arches, retaining walls, roofs, bridges, etc.

DYNAMICS.

Representation and measurements of forces and motions.

Principles of work and energy.

Efficiency of machines. Friction.

Transmission of energy—belts, shafts, cranks and connecting rod, etc.

Fly-wheels, governors.

Balancing of machinery, etc., etc.

STRENGTH OF THE PARTS OF MACHINES.

MACHINE DESIGN.

HYDRAULICS.

Discharge of water through orifices, notches, etc. Flow in pipes and open channels. Sewerage, water-works, water-power, water-wheels, turbines, pumps, etc.

THERMODYNAMICS AND THEORY OF THE STEAM ENGINE.

Text Books and Books of Reference.

- Baker—Masonry Construction.
- Billings—Heat and Ventilation.
- Bodmer—Hydraulic Motors, Turbines, etc.
- Buel and Hill—Reinforced Concrete.
- Cambria Steel.
- Carnegie Pocket Companion.
- Carpenter—Heating and Ventilation of Buildings.
- Carpenter—Experimental Engineering.
- Du Bois—Graphic Statics.
- Du Bois—Strains in Framed Structures.
- Foster—Electrical Engineers' Pocket Book.
- Gerhardt—House Drainage and Sanitary Plumbing.
- Gillette—Hand Book of Cost Data.
- Greene—Trusses and Arches.
- Innes—Centrifugal Pumps, Turbines and Water Motors.
- Johnson—Modern Framed Structures.
- Johnson—Materials of Construction.
- Kennedy—Mechanics of Machinery.
- Kent—Mechanical Engineers' Pocket Book.
- Ketchum—Steel Mill Buildings.
- Kidder—Building Construction and Superintendence.
- Kidder—Architect and Builders' Pocket Book.
- Lanza—Applied Mechanics.
- Low and Bevis—Machine Drawing and Design.
- Low—Machine Drawing.
- Marsh—Reinforced Concrete.
- Merriman and Jacoby—Roofs and Bridges.
- Merriman—Mechanics of Materials.
- Merriman—Hydraulics.
- Patton—Foundations.
- Peabody—Thermodynamics.
- Peabody—Steam Tables.
- Rafter and Baker—Sewage Disposal in the United States.
- Rankine—Applied Mechanics.
- Reuleaux—The Constructor.

Santo Crimp—Sewage Disposal Works.
Unwin—Testing of Materials of Construction.
Von Ott—Graphic Statics.
Unwin—Elements of Machine Design.
Trautwine—Engineers' Pocket Book.
Williamson—Elasticity.

THEORY OF MECHANISM.

Principles of the transmission of motion without reference to force.

Pitch surfaces, spur wheels, bevel wheels, skew-bevel wheels,
trains of wheelwork, teeth of wheels, cams, cranks, eccentrics,
links, bands and pulleys, hydraulic connections, frictional
Gearing, link motion for slide valves, etc.

Text Books and Books of Reference.

Auchincloss—Valve and Link Motions.
Goodeve—Elements of Mechanism.
Halsey—Slide Valve Gears.
Kennedy—Mechanics of Machinery.
Rankine—Machinery and Millwork.
Reuleaux—Kinematics and Machinery.

ELECTRICITY.

Instruction is given in this subject by a course of lectures and by work in the laboratories of the School.

The work comprises:—

INTRODUCTORY COURSE.

Lectures treating the principles of magnetism and electricity
in an elementary manner.

Lectures on electric circuits, wiring and distribution by feeders.

Short laboratory course.

ELECTRICAL MEASUREMENTS.

Lectures and laboratory work on methods of measuring resist-
ance, current, voltage, power, energy, candle-power, etc.;
calibration of instruments, location of faults, etc.

DYNAMO ELECTRIC MACHINERY.

Lectures on electromagnetism, theory of direct current machinery,
of alternating current circuits and machinery, of armature
windings, and design.

Laboratory work on magnetism, magnetic properties of iron and
complex magnetic circuits; on properties of conductors, in-
sulation and dielectrics; on photometry of electric lights;
on properties of shunt, series and compound-wound generators

and motors, etc. Experiments illustrating design. Work on inductance and capacity in alternating circuits, phase relations, measurement of power in polyphase circuits; study of transformers, alternators, induction motors, alternating arc lamps, etc.

ADVANCED COURSE (Fourth Year).

Lectures on mathematical theory of transformers, alternators, synchronous and induction motors, converters, high tension transmission, etc.

Laboratory work on constant voltage and constant current transformers, alternators, synchronous, induction and single-phase commutator motors, rotary and mercury converters, transmission, design; work with oscillograph, etc.

The advanced course may be taken by students in Mechanical and Electrical Engineering who take the "electrical option." Shorter courses are also arranged for students in other departments.

Text Books and Books of Reference.

- Bedell and Crehore—Alternating Currents.
- Bedell—Principles of the Transformer.
- Bell—Electric Power Transmission.
- Carhart and Patterson—Electrical Measurements.
- Ewing—Magnetic Induction in Iron.
- Fleming—Alternating Current Transformers, Vols. I. and II.
- Franklin and Williamson—Alternating Currents.
- Hooper and Wells—Electrical Problems.
- Jackson—Electromagnetism and the Construction of Dynamos.
- Kempe—Electrical Testing.
- Loudon and McLennan—Practical Physics.
- Parshall and Hobart—Armature Winding.
- Parshall and Hobart—Electric Generators.
- Raymond—Alternating Current Engineering.
- Ryan, Norris and Hoxie—Text Book of Electrical Machinery.
- Steinmetz—Elements of Electrical Engineering.
- Steinmetz—Alternating Current Phenomena.
- Behrend—Induction Motor.
- McAllister—Alternating Current Motors.
- Thompson, S. P.—Elementary Electricity and Magnetism.
- Thompson, S. P.—Dynamo Design.
- Thompson, S. P.—Dynamo Electric Machinery, Vols. I. and II.
- Wiener—Dynamo Electric Machines.

ARCHITECTURE.**HISTORY OF ARCHITECTURE.**

Egyptian, Assyrian and Persian.

Classic.

Romanesque and Byzantine.

Gothic.

Renaissance.

ORDERS OF ARCHITECTURE.**HISTORY OF ORNAMENT.****PRINCIPLES OF DECORATION.****PRINCIPLES OF PLANNING.****ELEMENTS OF DESIGN.****Text Books and Books of Reference.**

Fergusson—History of Architecture.

Fletcher—A History of Architecture.

Gwilt—Encyclopaedia of Architecture.

Leeds—Orders of Architecture.

Osborne—Art of House Planning.

Owen Jones—Grammar of Ornament.

Racinet—L'Ornement Polychrome.

Rickman—Gothic Architecture.

Sharpe—Seven Periods of Church Architecture.

Smith, T. Roger—Classic and Early Christian Architecture.

Smith, T. Roger—Gothic and Renaissance.

Stratham—Architecture for General Readers.

Sturgis—European Architecture.

Vignole—The five Orders of Architecture.

MATHEMATICS AND PHYSICS.**ALGEBRA.****PLANE TRIGONOMETRY.****ANALYTICAL GEOMETRY.****CALCULUS.****PLANE ASTRONOMY.****SPHERICAL TRIGONOMETRY.****Text Books and Books of Reference.**

Hall and Knight—Plane Trigonometry.

Loomis—Calculus.

Newcombe and Holden—Astronomy.

Osborne—Calculus.

C. Smith—Conic Sections.

Todhunter—Algebra.

Todhunter and Leatham—Spherical Trigonometry.

PHYSICS.**OPTICS.**

Laws of reflection and refraction.
 Optical constants of mirrors, lenses, etc.
 Theory of optical instruments.

HYDROSTATICS.

Laws of fluids at rest.
 Hydrostatic machines.
 Buoyancy.

HEAT.

Thermometry and Calorimetry.
 Coefficients of expansion.
 Mechanical equivalent.

ACOUSTICS.

Mode of propagation and velocity of sound.
 Laws of vibrating bodies.
 Architectural acoustics.

Text Books and Books of Reference.

Ames & Bliss—Manual of Experiments in Physics.
 Czapski—Theory of Optical Instruments.
 Deschanel—Principles of Physics.
 Edser—Light.
 Edser—Heat.
 Hastings and Beach—General Physics.
 Lummer—Photographic Optics.
 Minchin—Hydrostatics.
 Preston—Theory of Heat.
 Preston—Theory of Light.
 Poynting and Thomson—Sound.
 Robinson—Hydraulic Machinery.
 Tyndall—Sound.

CHEMISTRY.

Inorganic and organic chemistry.
 Applied chemistry.
 The chemistry of combustion, fuels, furnaces, artificial lighting,
 explosives, photography, building materials, water, air,
 sewage, chemical manufactures.
 Physical chemistry.
 Laboratory work, including technical analysis, the analysis of
 food, water and air, and toxicology.

Text Books and Books of Reference.

- Allen—Commercial Organic Analysis.
 Arnold—Steel Works Analysis.
 Beilstein—Organic Chemistry.
 Blair—Chemical Analysis of Iron and Steel.
 Blount—Electrochemistry.
 Bloxam—Chemistry.
 Bloxam and Blount—Chemistry for Engineers and Manufacturers.
 Blyth, A. W.—Poisons.
 Blyth, A. W.—Foods.
 Bolley—Handbuch der Chemischen Technologie.
 Dammer—Handbuch der Anorganischen Chemie.
 Fresenius—Qualitative and Quantitative Analysis.
 Furman—Manual of Practical Assaying.
 Hempel—Gas Analysis.
 Lord—Notes on Metallurgical Analysis.
 Lunge—Sulphuric Acid and Alkali.
 Lunge—Coal Tar and Ammonia.
 Meyer—History of Chemistry.
 Miller—Quantitative Analysis for Mining Engineers.
 Newth—Manual of Chemical Analysis.
 Noyes—Qualitative Chemical Analysis.
 Ostwald—Lehrbuch der Allgemeinen Chemie.
 Ostwald—Outlines of General Chemistry.
 Ostwald—Principles of Inorganic Chemistry.
 Pattison Muir—Thermochemistry, Elements of.
 Perkin and Kipping—Organic Chemistry.
 Poole—Calorific Value of Fuels.
 Remsen—Inorganic and Organic Chemistry.
 Roscoe and Schorlemmer—Treatise on Chemistry.
 Sadtler—Organic and Applied Chemistry.
 Smith, A.—Inorganic Chemistry.
 Sutton—Volumetric Analysis.
 Thorp—Outlines of Industrial Chemistry.
 Thorpe—Dictionary of Applied Chemistry.
 Treadwell—Lehrbuch der Analytischen Chemie.
 Wagner—Chemical Technology.
 Walke—Lectures on Explosives.
 Watt—Dictionary of Chemistry.
 Wiechman—Sugar Analysis.

ELECTROCHEMISTRY.**Text Books and Books of Reference.**

- Arrhenius—Lehrbuch der Elektrochemie.
 Blount—Electrochemistry.

Borchers—Electric Smelting and Refining.
 Dolezalek—The Accumulator.
 Elbs—Electrolytic Preparations.
 Jaeger—Normalelemente.
 Le Blanc—Electrochemistry.
 Lehfelddt—Electrochemistry.
 Liebetanz—Calciumcarbid and Acetylen.
 Lorenz—Elektrochemisches Praktikum.
 Luepke—Elements of Electrochemistry.
 Minet—Gewinnung des Aluminiums.
 Moissan & Lenher—The Electric Furnace.
 Oettel—Electrochemische Uebungsaufgaben.
 Wade—Secondary Batteries.

MINERALOGY, GEOLOGY AND METALLURGY.

1. Mineralogy and Geology.

Geology and Palæontology.
 Mineralogy and Crystallography.
 Petrography.
 Physical geography.
 Blowpipe analysis.
 Determinative mineralogy.

2. Mining and Metallurgy.

Mining Geology.
 Ore dressing.
 Metallurgy of iron and steel.
 Metallurgy of gold, silver, copper, nickel, etc.
 Assaying.
 Milling.

Text Books and Books of Reference.

Chapman and Brush—Mineral Tables.
 Crosby—Determination of Minerals.
 Dana—Manual of Geology.
 Dana—Minerals and how to study them.
 Dana—Text Book of Mineralogy.
 Furman—Assaying.
 Geikie—Text Book of Geology.
 Harker—Petrography for Students.
 Hofman—Metallurgy of Lead.
 Hixon—Lead and Copper Smelting.
 Ihlseng—Manual of Mining.
 Kemp—Handbook of Rocks.
 Kemp—Ore Deposits of the United States.

Kuhnhardt—Ore Dressing.
Nicholson—Palæontology.
Peters—Modern Copper Smelting.
Phillips—Ore Deposits.
Phillips and Bauerman—Elements of Metallurgy.
Plattner—Manual of Blowpipe Analysis.
Richards—Ore Dressing.
Rickard—Gold Milling.
Roberts-Austen—Metallurgy.
Rose—Metallurgy of Gold.
Rosenbusch—Petrography.
Williams—Crystallography.

THERMODYNAMIC LABORATORY.

The thermodynamic laboratory contains a 50-horse power Brown engine. The engine was constructed especially for experimental investigations, and the cylinder has steam jackets on the body and both ends arranged so that any or all of them may be used at once, or that all may be shut off as desired. The exhaust steam may be passed through a feed-water heater to the open air, or to a jet condenser or to a Wheeler surface condenser, the latter of which was kindly presented to the School by the inventor, Mr. F. M. Wheeler, of New York.

A compound Willans engine has recently been installed as a part of this laboratory. This engine is so arranged that it may be run condensing or non-condensing and it may also be converted into a simple engine if desired, thus allowing considerable latitude in the way of experimental work.

A De Laval turbine has also been placed in the laboratory, and is arranged with two alternative exhausts, direct to the atmosphere and to a surface condenser, suitable nozzles being provided for either purpose.

There are also a Blake circulating pump, a Knowles air pump, and a Blake feed pump, which is a gift of the manufacturers. Several injectors of various types are also available for experimental work and examination.

The steam for the plant is supplied by a Babcock & Wilcox boiler, and a Harrison-Wharton boiler.

For the work on internal combustion engines an engine of 10-horse power working on the Otto cycle has recently been installed. This engine is adapted for the use of gas or oil and has several independent methods of ignition. It is also so constructed that the effect of varying the compression pressure may be readily investigated.

An Ericsson air engine completes the experimental equipment of this laboratory. There are, in addition, the usual measuring instruments required in thermodynamic investigations, among which may be men-

tioned indicators of various types, gauges, gauge testing apparatus, calorimeters, both throttling and separating, scales, brakes, dynamometers, anemometers, thermometers, a platinum and platino-rhodium thermo-couple, and other instruments.

HYDRAULIC LABORATORY.

This laboratory contains two large steel tanks arranged for the experimental study of the flow of water through orifices and over weirs. Both orifices and weirs may be conveniently changed.

The discharge is measured by two tanks which are filled and emptied alternately by means of four valves operated by a single lever, thus enabling the measuring to be continued for any length of time without interrupting the flow.

The water is supplied by a new centrifugal pump of latest design and construction. This pump is so designed that it will give a discharge of 1,000,000 gallons per 24 hours, or it may be arranged to give half the discharge against double the head. In addition to being useful as a pump to supply water for the hydraulic work it forms an excellent piece of laboratory equipment and is so arranged that experiments may be made on it as to discharge and efficiency under varying conditions of speed and head.

For the work on turbines, etc., a six-inch New American turbine, the gift of the firm of William Kennedy & Sons, Owen Sound, has been set up so that efficiency determinations under different gate openings and heads may be made. In addition to this a thirty-six inch axial impulse turbine, and a Pelton wheel, each being provided with suitable brakes, means of accurately measuring the discharge continuously, and other requirements for experimental work have been installed. A small Doble wheel and a nine-inch McCormick turbine have also been added to the laboratory. There are also three centrifugal pumps, one made by the Morris Machine Works, another which has been kindly presented to the School by the Northey Co., Limited, Toronto, the manufacturers, and a third which has been specially designed and built for a more careful line of experimental work than is possible with the ordinary commercial pump of this class. A dynamometer and other necessary apparatus are provided for adopting these pumps to scientific investigations.

A Venturi meter has also been installed, and apparatus has been arranged so that the discharge from different forms of nozzles, and the frictional losses in elbows, valves, etc., may be determined.

Pipes have also been arranged so that the loss due to friction in iron pipes and fire hose may be determined, and the conditions of flow examined by means of the Pitot tube.

There are the usual measuring instruments, gauges, gauge-testing apparatus, scales, brakes and dynamometers.

STRENGTH OF MATERIALS LABORATORY.

The machines in this department are the following:—

An Emery 50-ton machine, built by William Sellers & Co., of Philadelphia, for making tests in tension and compression.

A Reihle 100-ton machine for making tests in tension, compression, shearing and cross-breaking. It will take in posts twelve feet long and beams up to eighteen feet in length.

A Reihle 10-ton universal testing machine.

A Buckton 15-ton universal testing machine.

An Olsen torsion machine for testing the strength and elasticity of shafting. This machine will twist shafts up to sixteen feet in length and two inches in diameter.

A Reihle transverse testing machine of 5,000 pounds capacity adapted to specimens up to 48 inches in length.

A Reihle abrasion machine, for testing the resistance to attrition of stones, brick, etc.

Extensometers of the Bauschinger, Unwin, Marshall and other types, besides a large number of micrometers and scales.

The shop is equipped with a number of high-class machine tools specially fitted for reducing the specimens to the requisite shapes and dimensions with a minimum of hand labour. It is also supplied with the necessary appliances for making ordinary repairs and for making special apparatus for original investigations.

CEMENT TESTING LABORATORY.

This department is fitted with all the usual moulds, gravimeters, tables and tank accommodation necessary in a well equipped laboratory.

In this laboratory there are also the following:—

A Reihle 2,000 pound machine, fitted for either tension or compression.

A 2,000 pound Fairbank's shot machine for tension.

An extra large Faija's hot bath apparatus.

METROLOGICAL LABORATORY.

In the geodetic and astronomical departments are a 100-foot and a 66-foot standard of length; a 10-foot Rogers comparator with a graduating attachment; a Kater's pendulum with a vacuum chamber; a Howard astronomical clock and electro-chronograph; a sidereal chronometer; a Cooke astronomical transit instrument; a zenith telescope, a Troughton & Simms 10-inch theodolite, a level trier, sixteen surveyor's transits, eleven levels, compasses, sextants, plane tables, micrometers, planimeter, etc.; and all the necessary field instruments.

ELECTRICAL LABORATORY.

Galvanometer laboratories:—Two laboratories are equipped with numerous galvanometers, resistance boxes, bridges, potentiometers, standard resistances, standard cells, etc., and much other usual and special apparatus for varied electrical experiments of the more delicate variety.

A third laboratory is fitted more especially for calibration of electrical instruments for alternating and direct currents. Some ninety portable measuring instruments are available for students' use, also standard instruments, including Weston laboratory standards, Kelvin balances, etc., with which the portable instruments may be compared.

Photometric laboratory:—This laboratory contains apparatus for studying the various types of arc and incandescent lamps.

Direct current machine laboratory:—This laboratory contains twelve dynamos and motors varying in capacity from 2 to 20 kilowatts, adapted for experiments illustrating the properties of compound, shunt and series dynamos and motors, arc machines, etc. Switchboards, numerous rheostats, lamp racks, starting boxes, circuit breakers, flexible cables, brakes, torsion dynamometers, tachometers, etc., are available for use with the machines. The students are supplied with the best standard portable ammeters and voltmeters obtainable.

Alternating current machine laboratory:—This laboratory contains two special 15 k.w. General Electric polyphase revolving field alternators direct-driven by Westinghouse motors, a 10 k.w. rotary converter, a special 7½ k.w. General Electric polyphase induction motor with open rotor circuits, Wagner single phase motor, Westinghouse single phase series motor, Westinghouse alternator, and several three phase induction motors; also transformers, reactive coils, lamp racks, rheostats, circuit breakers, flexible cables, brakes and other details for experiments on the properties of alternating currents and alternating current apparatus in general. A constant-current transformer with full load of series arc lamps, three oscillographs for studying wave forms, a high-potential transformer and a mercury arc rectifier may also be mentioned. The students are supplied with Weston, Westinghouse and Thomson portable instruments for measuring purposes.

GEOLOGICAL AND MINERALOGICAL LABORATORIES.

By the erection of a new Chemistry and Mineralogy Building on College Street the University has secured for the first time really modern laboratory equipment for the departments of Geology and Mineralogy.

For students of science generally brief courses are given in laboratory work, especially in personal examination of type sets of rocks, fossils, minerals and crystal models. These laboratory exercises serve to illustrate the introductory didactic instruction.

For the encouragement of pure crystallography the laboratories are supplied with goniometers of the various types, crystal models, appliances for the cutting of oriented crystal sections and for the physical examination of the same. Practical Petrography is carried on in rooms provided with type sets of rocks, both macroscopic and microscopic. Advanced students are taught to make thin sections of rocks and fossils and to study them microscopically. Students in Palæontology are given instruction in the preparation of material for study and are afforded an opportunity of examining type series of specimens.

The laboratory for the preparation of thin sections of rocks, minerals and fossils is provided with electric diamond saws and grinding appliances for the various types of work incidental to the preparation of thin sections and museum material.

A room is also provided for advanced work in Cartography and Geological Surveying.

The departments possess 28 petrological microscopes and five of other types so that it is now possible to provide advanced students with instruments and sets of thin sections for their own especial use. The blowpipe laboratory contains 156 lockers, especially designed for apparatus for students.

ASSAYING LABORATORIES.

Two assaying laboratories are situated in the basement of the Chemistry and Mining building, one has a floor space of 17 feet x 47 feet, and the other 28 feet x 37 feet, adjoining each is a room 15 feet x 11 feet, with the necessary equipment for the wet work in connection with assaying. Common to both laboratories is a balance room furnished with gold balances set on a concrete pier. Each of the laboratories contains a number of melting holes (18 in all) for crucible fusions, various gas furnaces both for crucibles and mufflers, and a large brick muffle furnace.

The furniture comprises lockers for the students, tables for the pulp balances and the necessary cabinets and shelving.

Adjoining the assay laboratories is a preparation room (19 feet x 13 feet) which is equipped with a motor, crusher, pulverizer, sample grinder and all the necessary hand pulverizers, screens, etc., for preparing ores for assay.

The metallurgical room is 40 feet x 21 feet and is equipped at present with a reverberatory furnace for roasting sulphide and arsenical ores, fume cupboard, lockers, tables, etc., and is intended for hydro-metallurgical work.

MILLING AND CONCENTRATING PLANT.

A detached building 72 feet x 70 feet in area, contains the milling and concentrating equipment. It is heated, lighted and supplied with power from the main building, and is divided into two parts. The greater part, with 72 feet x 53 feet floor space, and 22 feet high, contains the milling and concentrating equipment. The machinery for the former operations consists of a five-stamp battery erected on concrete foundation, Challenge ore feeder, amalgamating plates, Wilfley table for concentration, a clean up pan, steel settling tanks, a steel tank suspended from the roof girders to furnish a constant supply of water, and a track with travelling crawl to transport ore.

The concentrating part consists of a set of five revolving trommels for wet screening, four three-compartment jigs, a trough classifier delivering three products, and two revolving buddles. The waste products run to the same settling tanks as the tailings from the stamp battery. The ore is handled by a travelling crawl. All the machinery in this part is driven by a 10-horse power motor.

The plant throughout is intended mainly for experimental purposes and is made of such a size that numerous experiments can be carried out on small quantities of ore.

Tests can also be made on lots of one or two tons.

The other part of the milling building, with 72 feet x 17 feet floor space and 15 feet high, is divided into four separate rooms. The largest of the four rooms has an area of 476 square feet and is devoted to the crushing and pulverizing of the ores preparatory to their treatment in the milling and concentrating room. It is isolated in order to confine the dusty operations as far as possible to this one room, and is equipped with a gyrating crusher of Hadfield's make, a set of Hamilton rolls 16 inches by 12 inches, platform scales for weighing ore, a jib crane, pulleys, buckets, etc., for handling the rock. An adjoining room contains a 30-h.p. motor for driving the machinery of the crushing department, and storage bins for ore, work bench, etc. Another room with 17 feet x 15 feet floor space, is furnished with a magnetic separator of the Rowan-Wetherill make, driven by its own motor.

One room of the same size as the above remains available for future additions.

PHYSICAL LABORATORIES.

The Optical laboratory is equipped with optical benches and accessories for determining the optical constants of mirrors, lenses and lens combinations and for demonstrating the construction and use of telescopes, field glasses, microscopes, etc. There is a full equipment of optical instruments, including telescopes, microscopes, field glasses, comparators, spectrometers, saccharimeters, refractometers, level

tester, photometer, focometer, dynameter, cathetometer and cameras, a Newton lantern for microscopic projection in ordinary and polarized light, and a Thompson lantern for projection by transmission and reflection.

The Hydrostatic laboratory contains a supply of various forms of hydrometers, hydrostatic balances, Jolly balance, Mohr's balance, hydrostatic press, vacuum pumps, gauges, etc.

The Heat laboratory is equipped with a full supply of calorimeters and accessories for determinations of latent and specific heat. There is also a steam boiler and jacketed tubes for determinations of the expansion of metal rods, air thermometer, apparatus for verification of Boyle's law and pressure and boiling point curve and for determination of the absolute expansion of mercury, Nichol's modification of Rowland's calorimeter for determination of Mechanical Equivalent of Heat, the work being supplied by an electric motor.

The Acoustical laboratory is provided with sonometer, siren, forks ordinary and electric, Lissajous' and Melde's apparatus, organ pipes of various forms, manometric flame apparatus and a special equipment for work in architectural acoustics consisting of torsion chronograph, electro-pneumatic wind chest and standardized organ pipes and other accessories.

CHEMICAL LABORATORIES.

The Chemical laboratories are situated in the western half of the new Chemistry and Mining building, on the first and second floors. The rooms are large and well lighted, and are supplied with the usual modern equipment.

The first and second year laboratory for qualitative work has accommodation for 112 students, each working space being supplied with water, gas and fume cupboard. The third and fourth year laboratory for quantitative analysis will accommodate 36 students, and is supplied with commodious fume cupboards and all necessary apparatus. A laboratory with working places for 24 is provided for the students engaged in the study of technical chemistry; it is equipped with appliances for the preparation and testing of chemical products. Each of these laboratories has its own balance room adjoining, furnished with instruments from the best makers and adapted to the particular objects in view.

In addition there are rooms set apart for gas analysis, electrolytic analysis, calorimetry, and a specially constructed fireproof laboratory for combustion, crucible and bomb furnaces. Each of these laboratories is supplied with apparatus of the most approved design, providing excellent facilities for the prosecution of work in analytical and technical chemistry.

MUSEUM.

The Geological and Mineralogical Museum of the University is open to students of the Faculty of Applied Science, and is also accessible to the general public from 2 to 5 p.m. throughout the academic year.

The Museum is situated in the south-east corner of the ground floor of the Chemistry and Mining Building, and may be entered from the door at that corner of the building.

The southern half of the room is occupied by the cases of the palæontological collection in which are arranged a large series of fossils. These specimens are placed so as to display together the great groups of animals, while the minor divisions are based on stratigraphical grounds. Particularly worthy of note are the fine series of Crinoids and Cystids and the type specimens of Eastern Canada Cambrian fossils. A large part of this collection is due to the generosity of Dr. B. E. Walker and Mr. Wm. Mackenzie. On the walls of the museum are being placed some excellent specimens of large extinct vertebrates.

To the north of the fossil collection is the Ferrier Cabinet of Minerals containing good examples of nearly all the minerals known to science, as well as a special case with specimens of the various minerals from the Cobalt Mining District.

The northern part of the room is occupied by twenty cases exhibiting all the important rocks both igneous and sedimentary which go to make up the crust of the earth.

Around the walls are placed cases containing the chief economic mineral products arranged in accordance with their practical application to human activities. This collection is particularly rich in specimens from Ontario localities and includes most of the material formerly exhibited in the Engineering Building.

LIBRARY.

The library is supplied with a number of the more important scientific and technical periodicals. A valuable collection of works of reference in the subjects of study pursued in the School has been formed and is being added to year by year.

List of Donors to the Library.

American Society of Civil Engineers—Proceedings.
Association of Engineering Societies—Journal.
Blackwood, A. E.—Stone.
Bureau of Mines—Report.
Canadian Mining Institute—Journal.
Columbian University—Quarterly.

Department of Mines, Nova Scotia—Report.

Geological Survey of Canada—Report.

Gzowski, Estate of the late Sir Casimir—

Transactions of American Society of Civil Engineers, 1874-1898.

Transactions of Canadian Society of Civil Engineers, vol. I.,
1887—vol. XII., 1898.

Proceedings of the Institution of Civil Engineers, vol. LXIII.,
1880—vol. CXXXII., 1898.

Institution of Engineers and Shipbuilders in Scotland—Transactions.

Institution of Junior Engineers—Transactions.

Institution of Mechanical Engineers—Proceedings.

Royal Institute of British Architects—Journal and Proceedings.

Society of Chemical Industry—Journal.

Societe des Ingenieurs Civils de France—Memoires.

United States Coast and Geodetic Survey—Report.

United States Government Tests of Metals, etc.—Report.

University of Toronto—Studies.

SOCIETIES.

THE ENGINEERING SOCIETY OF THE UNIVERSITY OF TORONTO.

Officers for 1907-08.

<i>President.</i>	T. H. Hogg.
<i>Vice-Presidents.</i>	<div style="display: inline-block; vertical-align: middle;"> <div style="display: inline-block; vertical-align: middle;"> W. B. Redfern. J. Dorroch. M. E. Nasmith. </div> </div>
<i>Recording Secretary.</i>	R. L. Green.
<i>Corresponding Secretary.</i>	A. A. Kinghorn.
<i>Treasurer.</i>	A. F. Wilson.
<i>Librarian.</i>	G. A. Markle.
<i>Fourth Year Representative.</i>	H. M. Hyland.
<i>Graduates' Representative.</i>	G. R. Jones.
<i>Second Year Representative.</i>	A. D. Campbell.
<i>Third Year Representative.</i>	H. Coyne.
<i>First Year Representative.</i>	To be elected.

The Society meets every second Wednesday during the Academic year. Papers are read, and discussions are held on engineering subjects. The Society publishes a pamphlet annually, containing the best papers read at the meetings.

ATHLETIC ASSOCIATION OF THE FACULTY OF APPLIED SCIENCE.

Executive Committee 1906-1907.

<i>Honorary President.</i>	Principal Galbraith.
<i>President.</i>	E. W. Murray.
<i>Vice-President.</i>	G. R. Workman.
<i>Secretary-Treasurer.</i>	W. D. MacKenzie.
<i>Fourth Year Representative.</i>	G. R. Jones.
<i>Third Year Representative.</i>	H. M. Hyland.
<i>Second Year Representative.</i>	W. S. Jardine.
<i>First Year Representative.</i>	G. A. Markle.

The Athletic Association has full control over all athletic clubs using the name of the Faculty of Applied Science. The Executive Committee has power to suspend any one from the privileges of membership in the Association for any breach of its regulations, and controls the finances of all athletic clubs in the aforesaid Faculty. The annual membership fee of this Association is fifty cents.

No other moneys are collected for the support of athletics in the Faculty of Applied Science without the sanction of the Executive Committee.

RUGBY FOOTBALL.

The Mulock Cup, which was presented by Hon. Wm. Mulock, M.A., LL.D., to the University of Toronto Rugby Football Club for inter-college competition, brings out each year a large number of contestants from the University and affiliated colleges.

RUGBY FOOTBALL CLUB OF THE FACULTY OF APPLIED SCIENCE.

(Winners of Mulock Cup.)

Officers.

<i>Honorary President</i>	Principal Galbraith.
<i>President</i>	A. A. Kinghorn.
<i>Vice-President</i>	W. J. Walker.
<i>Secretary-Treasurer</i>	F. J. Anderson.
<i>Manager senior team</i>	E. S. G. Strathy.
<i>Captain senior team</i>	M. Kennedy.
<i>Manager junior team</i>	H. S. Marshall.
<i>Captain junior team</i>	B. Allison.

ASSOCIATION FOOTBALL.

In order to encourage Association Football on the College campus, the Faculty of the University of Toronto presented a cup, known as the Faculty Cup, to the Inter-College Association Football Club for annual competition among University and affiliated colleges.

ASSOCIATION FOOTBALL CLUB OF THE FACULTY OF APPLIED SCIENCE.**Officers.**

<i>Honorary President</i>	Prof. C. H. C. Wright.
<i>President</i>	C. T. Hamilton.
<i>Manager of seniors</i>	W. T. Jackson.
<i>Manager of juniors</i>	H. F. Shearer.
<i>Captain of seniors</i>	W. D. MacKenzie.
<i>Captain of juniors</i>	W. S. King.

HOCKEY.

The trophy which is competed for annually among the Colleges in hockey is known as the Jennings Cup, and is the gift of the late W. T. Jennings, Mem., Inst. C. E.

HOCKEY CLUB OF THE FACULTY OF APPLIED SCIENCE.**Officers.**

<i>Honorary President.</i>	Professor Ellis.
<i>President.</i>	C. T. Hamilton.
<i>Vice-President.</i>	B. Neilly.
<i>Secretary-Treasurer.</i>	G. C. Cowper.
<i>Manager of senior team.</i>	E. G. Hewson.
<i>Manager of junior team.</i>	W. J. Johnson.

TRACK CLUB.**Officers, 1906-1907.**

<i>Honorary President.</i>	Principal Galbraith.
<i>President.</i>	G. R. Workman.
<i>Vice-President.</i>	J. Van Nostrand.
<i>Secretary-Treasurer.</i>	A. D. Heuther.
<i>Fourth Year Representative.</i>	A. C. Spencer.
<i>Third Year Representative.</i>	H. C. Doorley.
<i>Second Year Representative.</i>	V. A. Goad.
<i>First Year Representative.</i>	To be elected.

OFFICERS OF THE 2nd FIELD COMPANY CANADIAN ENGINEERS.

<i>Major Commanding.</i>	W. R. Lang.
<i>Lieut. (Acting Adj.)</i>	H. N. Gzowski.
<i>Lieutenant.</i>	S. P. Biggs.
<i>Lieutenant.</i>	C. S. L. Hertzberg.
<i>Lieutenant.</i>	Emile von der Osten.
<i>Lieutenant.</i>	H. F. H. Hertzberg.
<i>Company Sergt.-Major.</i>	J. J. O'Sullivan.

UNIVERSITY OF TORONTO ATHLETIC ASSOCIATION.**Directorate.**

<i>Honorary President.</i>	Principal Hutton.
<i>President.</i>	D. Bruce McDonald.
<i>Vice-President.</i>	A. W. McPherson.
<i>Secretary-Treasurer.</i>	J. C. Sherry.
<i>Directors.</i>	Prof. DeLury.
	Prof. McCurdy.
	J. McLaughlan.
	E. M. Henderson.
	W. Martin.
	W. Lailey.

The Athletic Association is now the paramount body in University athletics, and has entire jurisdiction over the athletic clubs using the

University name, and over their finances, members, and policy, subject to the University authorities. Henceforth no financial agreement can be entered into by any such club without the sanction of the Directorate. No expenditure of any kind in connection with any such club can be made without the written order of the Secretary-Treasurer of the Directorate.

GYMNASIUM AND ATHLETIC GROUNDS.

"The University gymnasium was completed and equipped in 1893. It is fully provided with the best and most modern appliances for physical culture, and contains a running track, shower baths and swimming bath, besides the necessary dressing rooms and other conveniences. A competent instructor in gymnastics is in constant attendance to superintendent and direct the exercises of students. In addition to the lawn in front of the Main University Building and a campus in the rear, a large plot of ground on Devonshire Place has been set apart as an athletic field. By this addition the facilities for football, cricket, tennis and other out-door athletic sports are doubled, as compared with previous accommodation; and by these grounds, in conjunction with the gymnasium, ample opportunity is afforded to all students for healthful exercise and physical development. To assist in meeting the expenses of the gymnasium, a nominal annual fee is imposed on those who avail themselves of its advantages. The supervision of all athletic matters has been entrusted by the Council to an Athletic Board, consisting of six members appointed from the Faculty and officers of the Athletic Association. All applications of clubs for the use of grounds must be made annually to this Board. All such applications must be accompanied by a list of officers. In the case of new clubs the list of officers must be accompanied by particulars as to the organization and objects of the club making application."

STUDENTS' UNION BUILDING.

"In 1894 additions were made to the front of the building in which the gymnasium is situated, consisting of a large hall for public meetings, a reading room and committee rooms. This additional accommodation is available for the work of the various student societies, and for academic purposes. Applications for the use of rooms, accompanied by a list of officers and a copy of the constitution of the society making application, must be made, through the President, to the joint committee of the Councils on Gymnasium and Students' Union Building, at the beginning of the season, or from time to time as occasion requires. Arrangements have also been made by which recognized societies may obtain the use of committee rooms on application to the janitor of the Students' Union Building."

**FACULTY OF APPLIED SCIENCE.
YOUNG MEN'S CHRISTIAN ASSOCIATION.**

The Y.M.C.A. of the Faculty of Applied Science was organized January 27th, 1905, and forms an integral part of the University of Toronto Y.M.C.A., which is a federation of the Associations of the various Colleges and Faculties of the University. The object of the Association is to develop a true Christian manhood and to help the students in whatever way possible.

<i>Honorary President</i>	Prof. R. W. Angus.
<i>President</i>	P. R. Brecken.
<i>Vice-President</i>	S. L. Evans.
<i>Treasurer</i>	W. P. Murray.
<i>Recording-Secretary</i>	R. W. E. Toucks.

STUDENTS IN ATTENDANCE.

SESSION 1906-1907.

First Year.

REGULAR STUDENTS.

3 Agnew, J. N.....Stratford	6 Duff, A. R.....Toronto
1 Alison, A. E.....Toronto	1 Duthie, H. B.....Toronto
2 Allen, E. R.....Toronto	2 Duthie, L. J.....Toronto
3 Amsden, W. G.....Toronto	4 Ellis, H. C....Toronto Junction
1 Anderson, A. L.....Guelph	1 Falconer, F. S. ....Shelburne
3 Arens, E. G.....Orillia	1 Farrell, K. A.....Toronto
2 Austin, E. T.....Whitby	1 Ferguson, J. B.....Kenora
1 Baird, J. A.....Leamington	3 Ferguson, A. P.....Toronto
3 Barry, W. H.....Niagara Falls	4 Fiskien, J. B. K.....Toronto
1 Bennett, A.....Aylmer	3 Fletcher, F. T....Calgary, Alta
1 Berry, B. C.....Toronto	3 Flynn, C. C.....London
3 Black, W. D.....Toronto	1 Fortier, L. H.....Toronto
3 Blair, F. J.....Espanola	5 Fraser, W. J.....Toronto
3 Blizard, C. ....Toronto	2 Freeborn, S. G....Magnetawan
3 Boland, T. M.....Toronto	3 Freman, T. E.....Freeman
1 Boulton, W. J....Wallaceburg	3 Frost, E. R.....Tweed
1 Browne, E.....London	3 Furgry, T. A.....Belleville
3 Brydon, A. R.....Toronto	1 Fyfe, H. D.....Acton West
3 Burns, J. ....Toronto	1 Gibson, E. P.....Willowdale
3 Calvert, D. J.....Strathroy	2 Gibson, C. A.....Gananoque
1 Cameron, M. G.....Peterboro	1 Gibson, M. M.....Willowdale
2 Campbell, A.D.....Stayner	3 Glazier, M. B.....Brockville
3 Campbell, R. A.....Elmgrove	1 Goad, V. A. E.....Toronto
3 Caryle, W. M.....Toronto	3 Goggin, V. T.....Toronto
2 Cayley, H. E.....Brockville	5 Goodeham, A. E.....Toronto
1 Chestnut, V. S.....Toronto	3 Goodeve, V.....Acton
3 Clarke, F. W.....Toronto	3 Gooding, H. C.....Toronto
1 Cline, C. G.....Toronto	5 Gordon, O. D.....Hamilton
3 Cockburn, R. B.....Hamilton	3 Gorrie, D. A.....Toronto
5 Collinson, W. G...Seeley's Bay	3 Gourlay, V. F.....Galt
1 Collinson, J. G....St. Thomas	1 Graham, D. A.....Ivan
1 Coltham, G. W.....Aurora	2 Grant, R. R.....Toronto
3 Cooch, H. A. ....Toronto	3 Grant, A. D.....Sarnia
3 Corman, W. E....Stoney Creek	1 Gray, J. E.....Uxbridge
3 Crosby, T. H.....Sardis, B.C.	1 Greene, R. L.....Toronto
3 Cumming, N. S.....Hamilton	1 Greene, G. E. D.....Toronto
3 Cunerty, T. J.....Toronto	3 Greey, A. ....Toronto
3 Cunningham, R. H.....London	2 Griffith, T. G...Toronto Junction
3 Danks, C. N.....Toronto	1 Gunn, W. W.....Toronto
3 Davis, H. W.....Newmarket	2 Gzowski, J. S.....Toronto
2 Davis, A. I.....Toronto	3 Hagerman, F. G.....Cobourg
1 Dawson, I. H....St. Catharines	1 Hall, H. ....Toronto
3 Derham, W. P.....Ottawa	3 Hall, R. S.....Peterboro
3 Dissette, A. C.....Toronto	1 Harcourt, R. M.....Toronto
5 Doods, W. A.....Toronto	3 Harper, C. J.....Uxbridge
3 Douglas, W. H.....Eglinton	1 Harstone, R. G. L.....Lindsay

First Year—Continued.

- | | |
|------------------------------------|------------------------------------|
| 3 Hartney, H. E.....Toronto | 1 McEachren, F. Y. P....Toronto |
| 1 Harvey, D. W.....London | 3 McElhanney, T. A....Kincardine |
| 3 Hatch, F. C.....Whitby | 3 McIntosh, W. G.....Seaforth |
| 3 Heintzman, H..Toronto Junction | 3 McSloy, J. I....St. Catharines |
| 1 Helliwell, J. G.....Toronto | 1 McVean, R. ....Dresden |
| 3 Hemphill, J. ....Klienburg | 1 McKinnon, J. G.....Milverton |
| 3 Henderson, E. Mc...Marshville | 1 MacLachlan, W. A.....Guelph |
| 3 Hill, A. ....Owen Sound | 3 MacLean, J. ....Gore Bay |
| 3 Hollingshead, G.....Toronto | 3 Macdonald, J. B.....Lindsay |
| 3 Holmes, A. E....Owen Sound | 3 Macfarlane, E.D...Dawson, Y.T. |
| 3 Holmes, C. ....Chatham | 1 Mackintosh, N. H. |
| 4 Holton, G. H.....Belleville | Bournemouthe, Eng. |
| 1 Hoshal, G. G....Niagara Falls | 1 Macpherson, N. W...St. Thomas |
| 1 Huffman, K. ....Toronto | 1 Macpherson, G. A. |
| 3 Hughes, C. ....Toronto | Niagara Falls, S. |
| 1 Hunter, A. E.....Warton | 3 Manning, N. H.....Oshawa |
| 1 Hyland, R. T.....Toronto | 3 Manson, A. B.....Fairview |
| 3 Irwin, A. B.....Stratford | 1 Markle, G. A.....Toronto |
| 3 Irwin, H. ....Hillsburg | 2 Marshall, H. J.....London |
| 3 Isbister, J. ....Wingham | 1 Martindale, E. S....Kingsmill |
| 1 Jack, R. T. G.....Toronto | 1 Martyn, O. W.....Mitchell |
| 3 Jackes, F. P.....Thornhill | 1 Middleton, J. J..Lurgan, Ireland |
| 2 Jackson, J. E...Oxford Centre | 2 Miller, W. N...Sault Ste. Marie |
| 5 James, G. A.....Nilestown | 3 Mills, P. E.....Toronto |
| 3 Jamieson, E. A.....Pakenham | 3 Morgan, J. P.....Newmarket |
| 1 Jeffery, C. C.....Midland | 2 Morris, C. A.....Toronto |
| 5 Jelfs, F. C.....Hamilton | 3 Morton, G.....Carluke |
| 1 Jennings, R. B. Toronto Junction | 4 Muldrew, W. H. |
| 1 Johnson, C. C.....Toronto | Toronto Junction |
| 1 Johnston, W. J...St. Catharines | 1 Munro, F. V.....Chatham |
| 1 Kean, D. J.....Gamebridge | 3 Munson, A. H.....Hamilton |
| 1 Kennedy, W. J. M..Newmarket | 1 Murton, J. C.....Fergus |
| 3 Kemp, J. B. O.....Toronto | 3 Nash, J. C.....London |
| 3 Kettle, T. H.....Toronto | 1 Nelles, J. S.....London |
| 3 Kev, W. R.....Toronto | 1 Neville, E. A.....Ruthven |
| 5 Koltz, H. N.....Toronto | 3 New, R. H.....Toronto |
| 3 Lamont, A. W.....Roome | 3 Niebel, E. H.....Norwood |
| 3 Langmuir, B. ....Toronto | 3 Odell, L. S.....Odell |
| 3 Leadman, H. L.....Medina | 3 O'Flynn, J. D.....Belleville |
| 1 Leitch, J. N.....Toronto | 1 O'Gorman, C. A. W. |
| 3 Lennox, A. E.....Orillia | Depot Harbour |
| 2 Loucks, R. W. E....Minniehill | 1 O'Neil, C. M..Erindale-on-Credit |
| 3 McAlpin, D. D.....Tona | 2 Parish, A. G.....Athens |
| 1 McArthur, A. S.....Toronto | 1 Patterson, E. B.....Toronto |
| 1 McClenahan, C. A.....Appleby | 3 Peters, F. M..Ft. Saskatchewan |
| 3 McColl, E. B.....Glencoe | 1 Petry, A. M.....Toronto |
| 3 McCollum, C. R.....Welland | 3 Philp, W. M.....Penryn |
| 3 McConnell, W. A...Humber Bay | 2 Porter, L. A. M....Powasson |
| 3 McCool, A. J.....Ottawa | 1 Pounder, I. R.....Pembroke |
| 3 McCordick, A. S..St. Catharines | 1 Pye, D. E.....Arnprior |
| 3 McCuaig, P. J.....Gamebridge | 1 Railton, L. W...Newport, Eng. |
| 5 McDonald, G. G.....Toronto | 1 Ramsperger, A. F...Humber Bay |
| 1 McDonald, G. E.....Cornwall | 1 Redfern, C. R....Owen Sound |
| 3 McDougal, J. E.....Toronto | 3 Rose, G. B.....Elora |
| 1 McDougall, S. G.....Ottawa | 1 Rubidge, W. F. B.....Dixie |

First Year—Continued.

3 Rudolf, O. R. Hampstead, B.W.I.	1 Tipper, G. A.....Brantford
3 Rutledge, L. T....Glenwilliams	3 Trees, A. G.....Toronto
3 Ryerson, J. E. E.....Toronto	3 Trusler, W. A.....Camlachie
3 Sara, R. A.....Toronto	3 Turnbull, W. G.....Toronto
3 Scharabaum, A. ....Galt	3 Van Allen, M.....Toronto
3 Schwenger, C. E.....Hamilton	1 Vatcher, A....Freshwater, Nfld.
1 Sedgwick, A. ....Windsor	1 Venney, L. T.....Brockville
4 Self, J. H.....Toronto	6 Vogan, S. J. ....Toronto
1 Sharpe, D. N.....Lindsay	2 Waite, C. B.....Port Hope
5 Shaw, M. R.....Forest	1 Walker, C. M.....Guelph
2 Smith, F. L.....Burlington	2 Wallace, J. L.....Hamilton
3 Sparling, M. W.....Courtland	1 Warrington, G. A....Cornwall
3 Spinney, E. H..Yarmouth, N.S.	5 Watson, C. E.....St. George
1 Stewart, N. C....Nelson, B.C.	1 Webb, E. E.....Orillia
3 Stewart, J. D.....Chesley	3 White, F. C.....Chatham
1 Street, J. C.....Ottawa	3 Whitelaw, A.R...Brandon, Man.
3 Stroud, S. ....Hamilton	1 Wilkinson, R. G.....Aberarder
1 Stutt, H. G....West Flamboro	1 Williamson, O. T. G....Guelph
1 Sutherland, D. ....Toronto	3 Wilson, E. R.....Antrim
1 Swan, R. G.....Kincardine	3 Wilson, H. P. ....Toronto
1 Tate, H. W...Wimbledon, Eng.	3 Wilson, L. Z.....Brampton
6 Thomson, G. G.....Orillia	2 Wilson, R. R.....Toronto
	3 Woodley, G. E.....Waterford

NON-REGULAR STUDENTS TAKING FULL COURSE.

1 Barnet, H. A.....Toronto	1 Newton, W. E.....Toronto
3 Birchard, E. R....Linden Valley	2 Palmer, E. P. B. Zacatecas, Mexico
1 Buchanan, J. A.....Comber	1 Pollard, S. B.....Petrolea
3 Bowen, G. H.....Toronto	3 Porter, C. J.....Marburg
1 Cepeda, M. Funja Rep. Columbia, S.A.	1 Quail, J. ....Toronto
1 Dallyn, F. A.....Toronto	3 Rogers, R. G....Winnipeg, Man.
5 Evans, W. G.....Collingwood	3 Rudy, I. S.....Baden
3 Featherstonhaugh, J. E. Toronto	3 Rust, F. C.....Toronto
1 Fraser, A....London, C.E., Eng.	1 Sergé, B. H. Savanna la Mar, B.W.I.
1 Hay, C. O.....Falkenburg	3 Smith, E. A.....Toronto
1 Hicks, N. W.....Humber Bay	1 Sutherland, C. C. Edmonton, Alta.
3 Hinch, E. F.....Centreville	3 Sylvester, K. B.....Lindsay
1 James, E. W. Portage la Prairie, Man.	3 Thompson, E. A....Teeswater
3 Jardine, G. R....Bowmanville	3 Train, C. W.....Haileybury
1 Lee, F. A.....Springfield, Mass.	4 Walker, J. T.....Toronto
1 McMillan, V.....Port Hope	5 Williams, J. A. Mc...Deer Park
3 MacAndrew, W. M....Renfrew	1 Wookey, S. A.....Toronto
1 Michaud, J. A.....Toronto	

Second Year.

3 Adams, O. F.....Toronto	3 Annis, S. E.....Scarboro
3 Akers, H. G.....Toronto	5 Arens, J. R.....Orillia
3 Allan, L. F.....Toronto	3 Armstrong, H. V.....Trenton
1 Allison, C. B...South Woodslee	3 Barber, H. C.....Toronto
1 Anderson, R. M....Burlington	1 Bartlett, E. ....Smithville

Second Year—Continued.

3 Beckstedt, R. D. S.	Lacolle, Que.	3 Gulley, C. L.	Uxbridge
2 Bedford, F. J.	Lakefield	3 Hackner, J. W.	Sanford
3 Beith, R. E.	Toronto	3 Hall, R. H.	Peterboro
3 Bell, G. G.	Toronto	5 Harris, F. K.	Toronto
3 Bitzer, A. M.	Berlin	3 Haviland, F. L.	West Lorne
3 Black, G. E.	Stratford, Sta.	1 Henderson, C. D.	Toronto
3 Bowes, H. F.	Toronto	1 Hopkins, C. H.	Lindsay
3 Brace, J. H.	Brockville	1 Huether, A. D.	Warton
1 Brecken, P. R.	Toronto	5 Huether, D. J.	Neustadt
3 Brown, C. E.	Meaford	3 Hunter, A. N.	Toronto
3 Brown, E. I.	Paris	3 Iler, S. B.	Belleville
1 Bryce, W. F. Mc.	Toronto	1 Jardine, W. S.	Omamee
3 Buchan, P. H.	Vancouver, B.C.	1 Johnston, J. T.	Kincardine
1 Cameron, D.	Marmora	1 Keffer, A. H. E.	Toronto
2 Campbell, J. E.	Ivan, P.O.	2 Kennedy, H. G.	Ottawa
2 Campbell, N. A.	Toronto	2 Kennedy, M. D.	Ottawa
1 Carrie, K. N.	Toronto	1 Keys, W. R.	Winchester
1 Carscalen, H. R.	Calgary, Alta.	3 Killip, W. C.	Pictou
3 Challen, G.	Simcoe	3 King, W. S.	Guelph
1 Clarke, H. S.	Toronto	1 Kortright, F. H.	
3 Clendenning, C. S.	Toronto		St. Kitts, B.W.I.
1 Cole, W. E.	Sarnia	3 Lawrence, J. B.	Winnipeg, Man.
4 Collett, W. C.	Toronto	3 Leslie, J. N. M.	Elora
5 Corrigan, S. O.	Toronto	3 Lewis, F. C.	Ingersoll
3 Coyne, H.	St. Thomas	3 Lynar, H. R.	Toronto
2 Cruickshank, A. M.	Western	3 McCracken, J. F.	Brussels
2 Cumming, J. D.	Toronto	2 McDonald, M. P.	Toronto
6 Dahl, A. D.	Dutton	1 McGeorge, W. G.	Chatham
1 Danks, F. A.	Toronto	1 McKechnie, F. H.	Woodstock
1 Dann, E. M.	London	3 McLeod, G.	Armon
3 Darroch, J.	Gillies Hill	1 McMaster, W. A. A.	Palmerston
1 Davis, H. C.	Burlington	1 McMordie, H. C.	London
3 Delahaye, W. H.	Pembroke	1 McRoberts, A. A.	Pontypool
3 Doorly, H. C.		5 Madge, N. G.	Exeter
	San Fernando, Trinidad	1 Maguire, H. C.	St. Catharines
2 Douglas, R. H.	Banff, Alta.	3 Malone, J. E.	Breshin
1 Duff, M. O'R.	Hamilton	5 Marlatt, K. D.	Oakville
2 Dyer, F. C.	Toronto	1 Marshall, R. J.	Toronto
1 Eagleson, F. M.	Gorrie	1 Meader, C. H.	Toronto
1 Edwards, C.	Toronto	5 Milligan, G. L.	Brampton
1 Evans, S. L.	Corinth	1 Mitchell, A. B.	Toronto
1 Ewing, E. O.	Toronto	4 Molesworth, J. C. P.	Toronto
1 Flanagan, O. L.	Gore Bay	3 Monk, E. D.	Cornwall
1 Flint, C.	Toronto	3 Moody, F. H.	Toronto
1 Foord, R. J.	Toronto	3 Morice, J. H.	Niagara Falls
2 Foreman, J. M.	Lucan	3 Mowbray, F. E. H.	Kinsale
1 Foster, A. H.	Guelph	3 Murray, S.	Goderich
3 Francis, G. C.	Verschoyle	3 Murray, W. P.	Fairview
2 Frid, H.	Hamilton	5 Nasmith, M. E.	Toronto
3 Gear, S. S.	Fort Erie	3 O'Donnell, V. J.	Merrickville
1 Gemmel, H. W. R.	Selkirk, Man.	3 O'Grady, W. deC.	Toronto
1 Gerard, A.	Ottawa	3 O'Hearn, J. J.	Toronto
1 Graham, J. J.	Derry West	1 Pea, A. W.	Barrie
1 Grassie, A.	Smithville	1 Peckover, H. J.	Sunderland
1 Greene, W. H.	Toronto	1 Pequegnat, M.	Berlin

Second Year—Continued.

1 Power, C. W.....	Toronto	3 Stewart, A. W. J.....	Bunyan
2 Ponton, G. M.....	Belleville	1 Stock, J. J.....	Toronto
1 Pigott, R. B.....	Hamilton	1 Stuart, H. B.....	Mitchell
2 Phillips, F. F.....	Seaforth	3 Sword, A. D.....	Toronto
3 Pivnick, M.	Toronto	1 Taylor, W. E.....	Massie
3 Proctor, T.	Hamilton	3 Taylor, J. W. R.....	Keene
1 Proctor, E. M.....	Sarnia	3 Thomas, V. C.....	Toronto
1 Publow, C. F. Pilot Mound, Man.		2 Thompson, H. P.....	Toronto
1 Ransom, J. T.....	Toronto	1 Thornley, H.	London
1 Redfern, W. B....	Owen Sound	1 Toms, C. G.....	London
3 Reesor, N. H.....	Cedar Grove	1 Underwood, J. E.....	Lakelet
1 Richardson, F. L.....	Maple	3 Van Norman, C. P....	Toronto
3 Ricker, H. A.....	Dunnville	1 Van Nostrand, J.....	Toronto
5 Robertson, F. A.....	Toronto	1 Villeneuve, T. L.	
3 Qua, A. H.....	Paris		Chicoutimi, Que.
1 Robertson, A. R.....	Glencoe	1 Walker, J. A.....	Guelph
3 Robinson, R. C. Winnipeg, Man.		3 Waugh, B.	Berlin
1 Robinson, W. A. Winnipeg, Man.		1 Webb, C. E.....	Toronto
5 Rogers, L. J.....	Oshawa	3 Webster, W. J. C.....	Oakwood
2 Rose, R. R.....	Guelph	3 Wedlake, R. M.....	Brantford
3 Ross, D.....	London	3 Weir, R. P.....	Toronto
1 Sanderson, A. U.....	Toronto	1 West, A. M.	
1 Secord, A. O.....	Brantford		Mount Pleasant, Van.
3 Shaw, W. F. V. Sydney, N.S.W.		1 White, E. V. H.....	Burlington
3 Shearer, H. F.....	Vittoria	3 White, W. J.	
3 Spence, J. J.....	Toronto		Trafalgar, Western Australia
3 Squire, G. E.....	Mitchell	3 Wilson, F. F.	Harriston
3 St. Lawrence, J.....	London	3 Wilson, F. D.....	Toronto
1 Stamford, W. L.....	Dundas	1 Wing, D. O.....	Berlin
3 Starr, R. H.....	Toronto	1 Workman, G. R....	Tillsonburg
3 Stayner, D. S.....	Toronto	3 Young, R.	Almonte

Third Year.

3 ¹ Allen, F. G.....	Erie, Pa.	3 Coulter, G. P.....	Buffalo, N.Y.
1 Anderson, F. J.....	Niagara Falls	1 Cowper, G. C.....	Welland
1 Augustine, A. P.....	Arkona	2 Culbert, J. V.....	London
3 ¹ Bothwell, C. C.....	Barrie	3 ¹ Davis, R.	Schomberg
1 Bourne, O. B....	Winnipeg, Man.	3 ¹ Dawson, G. A....	Mount Forest
3 ¹ Bowman, H. D.....	London	3 ¹ Evans, S. D....	Leamington..
3 ¹ Brady, W. S.....	Toronto	3 ¹ Ewart, F. R.....	Toronto
1 Broughton, G. H.....	Paris	1 Fleming, G. R. S.....	Toronto
1 Brown, J. A.....	Sarnia	6 Fux, P. C.....	Brantford
1 Bruce, W. J.....	Toronto	1 Galletly, J. S....	Wychwood Pk.
1 Bush, C. E.....	Toronto	2 Galt, G.	Winnipeg, Man.
3 ¹ Campbell, G. A.....	Millbrook	1 Garrow, A. B.....	Toronto
3 ¹ Caster, J. H....	North Claremont	1 Gillies, A.	St. Thomas
1 Cavell, E.	Owen Sound	1 Graham, G. W.....	Eugenia
1 Chestnut, F. H.....	Toronto	3 ¹ Grasett, C. S.....	Barrie
3 ¹ Clendening, A. C.....	Toronto	1 Hagarty, R. E. W....	Toronto
5 Coleman, R. M.....	Toronto	3 ¹ Hall, K.	Hamilton
3 Connell, C. B.		1 Hamilton, C. T.....	Windsor
	St. Kitts, B.W.I.	1 Hara, F. J.....	Merritton
1 Cory, R. Y.....	Toronto	3 Hare, R. A....	St. Catharines

Third Year—Continued.

1 Hertzberg, H. F. H. Westmount, Que.	1 Neelands, E. W.....Forest
1 Hewson, E. G.....Toronto	1 Neelands, R. E. K....Brampton
3 Hill, H. O.....Toronto	2 Neilly, B. ....Bradford
1 Hogg, T. H.....Chippewa	1 Nourse, A. E.....Deer Park
3 ¹ Hutton, C. H. ....Hamilton	3 ¹ O'Sullivan, J. J.....Toronto
1 Hyland, H. M.....Toronto	2 Paton, T. K.....Merritton
3 Hyman, E. W.....London	1 Paulin, F. W.....Arthur
3 ¹ Ireland, L. G.....Durham	3 ¹ Percy, H. A.....Alvinston
1 Jackson, W. ....Ridgeway	1 Potter, R. B.....Lieury
4 Jackson, C. B.....Petrolea	3 ¹ Procknow, F. E. Wilmington, Del.
3 ¹ Kay, E. W.....Paris	3 ¹ Procunier, J. F.....Bayham
3 ¹ Keith, D. F.....Toronto	3 ¹ Quance, G. E.....Delhi
1 Keith, H. P.....Comber	3 Raine, H. ....Orton
1 Kinghorn, A. A.....Toronto	1 Rannie, J. L.....Keswick
1 Klingner, L. W.....Toronto	3 Richardson, C. W. B..Wiarton
1 Lamb, F. C.....Walkerton	1 Ridler, A. A.....Toronto
2 Lamb, G. J.....Walkerton	5 Rothwell, H. E.....Toronto
3 LePan, A. D.....Owen Sound	5 Scholfield, C. A.....Dunnville
1 Lindsay, J. H.....Hornby	1 Sheppard, A. C. T.....Ottawa
3 McCurdy, J. A. D. Baddeck, C.B.N.S.	1 Smith, F. R.....Carstairs, Alta.
1 McFarlane, J. B.....Claremont	3 ¹ Smithrim, E. R.....Cairngorm
3 ¹ McGugan, D. J.....Ekfrid	1 Snaith, W. ....Quebec, P.Q.
3 ¹ McIntosh, A. H.....Mosboro'	1 Southworth, H.....Brockville
3 ¹ McNeill, F. W.....Toronto	3 Spencer, A. C.....London
1 McQuarrie, M. K. Vancouver, B.C.	3 ¹ Stewart, G. S.....Strathroy
1 MacKay, A. G.....Toronto	1 Stiles, J. A.....London
1 Mackenzie, W. D.....Kirkfield	3 ¹ Stiver, J. L.....Mount Albert
1 MacLeod, G. ....Parkhill	1 Strathy, E. S. G.....Toronto
1 Malcolmson, W. S.....Toronto	1 Stuart, J. L. G.....Toronto
3 Marshall, S. A.....Snelgrove	1 Summers, G. F....Winchester
6 Mason, D. H. C.....Toronto	1 Sutcliffe, H. W.....Forest
3 ¹ Maynard, H. V.....Port Hope	1 Thompson, P. M.....Picton
1 Melson, J. W.....Toronto	3 ¹ Thomson, R. O.....Blenheim
1 Mills, G. G.....Toronto	1 Thomson, L. R.....Toronto
3 ¹ Minns, J. B.....Woodstock	1 Walker, W. J.....East Toronto
4 Molesworth, G. N.....Toronto	1 Wilkes, E. D.....Brantford
1 Moore, J. M. C.....London	3 ¹ Wilkie, J. H. M.....Toronto
5 Morley, P. F.....Toronto	3 ¹ Wilson, A. F.....Toronto
1 Munro, D. G.....Iona	1 Wilson, J. M.....Toronto
1 Murray, E. W.....Seaforth	3 Woods, M. H....Aylmer West
3 ¹ Murray, J. D.....Toronto	1 Wright, G. W. A.....Toronto
	3 Young, J. ....Chesley
	3 ¹ Zimmer, A. R.....Brussels

Fourth Year.

3 Armer, J. C.....Chesley	1 Brian, M. E.....Windsor
1 Baker, M. H.....St. Thomas	1 Bunnell, A. E. K....Brantford
2 Banting, E. W.....Toronto	1 Cook, W. A. Mc.....Toronto
2 Bates, M. ....Chatham	1 Cousins, E. L.....Toronto
3 Betts, H. H.....London	4 Daniels, W. N...Norristown, Pa.
5 Beynon, D. E.....Toronto	3 Death, N. P. F.....Dixie
3 Brandon, H. E.....Cannington	3 Dundass, C. S.....Putnam

Fourth Year—Continued.

3 Guest, W. S.....Elginfield	1 Mitchell, B. F.....Hamilton
3 Hamilton, C. B.....Toronto	1 Montague, F. F.....Toronto
3 Hartney, J. C.....Toronto	1 Near, W. P.....St. Mary's
1 Hett, S. ....Sutton West	3 Nicklin, W. G. Grand Rapids, Mich.
3 Hopkins, R. H.....Lindsay	3 Park, D. G.....Chatham
1 Johnston, C. ....Mildmay	1 Porte, W. B.....Oakville
1 Jones, G. R.....Brantford	2 Purser, R. C.....Windsor
3 Jones, T. ....Toronto	3 Robertson, N. R.....Walkerton
1 Jupp, A. E.....Toronto	1 Rogers, C. H.....Peterboro
1 Lang, J. L.....Toronto	2 Rolfson, O. ....Walkerville
4 McConnell, A. W....Walkerton	1 Ross, R. C.....Port Robinson
3 McPherson, J. A.....Bolsover	1 Ross, K. G.....Toronto
2 MacKenzie, K. A.....Toronto	2 Thomson, J. E.....Toronto
3 MacLachlan, W. ....Toronto	2 Young, W. H.....Clifford
1 Menzies, J. M.....Staples	

OCCASIONAL STUDENT.

Shirriff, C. H....Niagara Falls S.

Art Students Taking Instruction in Applied Chemistry, Assaying,
Surveying and Drawing.

Bileby, G. ....Blyth	Eakins, H. O.....Toronto
Bowles, O. ....Randolph	Moore, E. P.....Burlington
Boyd, A. M.....Toronto	

Summary:

First Year Students.....	278
Second Year Students.....	177
Third Year Students.....	123
Fourth Year Students.....	43
Occasional Students	1
Arts Students.	5

PRIZEMEN.

Engineering.

1879.	I.	Year.	J. McAree.	1st	Prize.
1880.	II.	"	J. L. Morris.	1st	"
1881.	I.	"	G. H. Duggan.	1st	"
	II.	"	D. Jeffrey.	1st	"
1882.	I.	"	A. R. Raymer.	1st	"
	I.	"	E. W. Stern.	2nd	"
	II.	"	G. H. Duggan.	1st	"
	III.	"	D. Jeffrey.	1st	"
1883.	I.	"	B. A. Ludgate.	1st	"
	I.	"	A. M. Bowman.	2nd	"
	II.	"	A. R. Raymer.	1st	"
	II.	"	E. W. Stern.	2nd	"
	III.	"	G. H. Duggan.	1st	"
1884.	II.	"	B. A. Ludgate.	1st	"
	III.	"	E. W. Stern.	1st	"
	III.	"	A. R. Raymer.	2nd	"
1885.	I.	"	A. E. Lott.	1st	"
	I.	"	J. Rogers.	2nd	"
	II.	"	T. K. Thomson.	1st	"
	III.	"	B. A. Ludgate.	1st	"
1886.	I.	"	C. H. C. Wright.	1st	"
	I.	"	J. E. Ross.	2nd	"
	II.	"	A. E. Lott.	1st	"
1887.	I.	"	H. E. T. Haultain.	1st	"
	II.	"	C. H. C. Wright.	1st	"
	III.	"	A. E. Lott.	1st	"
	III.	"	J. Rogers.	2nd	"
1888.	I.	"	E. B. Merrill.	1st	"
	I.	"	F. M. Bowman.	2nd	"
	II.	"	D. D. James.	1st	"
	III.	"	C. H. C. Wright.	1st	"
1889.	I.	"	J. K. Robinson.	1st	"
	I.	"	G. E. Silvester.	2nd	"
	II.	"	E. B. Merrill.	1st	"
	II.	"	F. M. Bowman.	2nd	"
	III.	"	D. D. James.	1st	"
1890.	I.	"	C. Fairchild.	1st	"
	III.	"	J. K. Robinson.	1st	"
	III.	"	F. M. Bowman.	1st	"
	II.	"	E. B. Merrill.	2nd	"

1891.	I.	"	A. J. McPherson.....	1st Prize.
	I.	"	R. B. Watson.....	2nd "
	II.	"	J. B. Goodwin.....	1st "
	III.	"	G. E. Sylvester.....	1st "
	III.	"	C. W. Dill.....	2nd "
1892.	I.	"	A. E. Bergey.....	1st "
	I.	"	R. W. Angus.....	2nd "
	II.	"	A. J. McPherson.....	1st "
	II.	"	R. B. Watson.....	2nd "
	III.	"	E. J. Laschinger.....	1st "
	III.	"	C. Fairchild.....	2nd "

The Grant of prizes was withdrawn at the close of 1892.

Architecture.

The prize in Architecture was the gift of Mr. D. B. Dick, Architect, Toronto.

1891.	I. Year.	H. F. Ballantyne.
1892.	I. Year.	J. A. Ewart.
1893.	I. Year.	A. H. Harkness.
1894.	I. Year.	E. A. Forward.
1895.	I. Year.	W. F. Scott.
1896.	I. Year.	D. Macintosh.
1899.	I. Year.	W. F. Shepherd.

Civil Engineering.

Prizes are awarded for general proficiency in the subjects of the Third Year.

Date.	Name.	Donor.
1897.	M. B. Weekes.....	T. Kennard Thomson, C.E.
1898.	J. A. Stewart.....	"
1899.	T. Shanks.....	"
1900.	E. H. Phillips.....	"
1901.	H. P. Rust.....	"
1902.	W. F. Ratz.....	"
1903.	C. R. Young.....	"
1904.	W. N. Moorhouse.....	"
1905.	W. Barber.....	"
1905.	N. L. Crosby.....	Noel Marshall, Esq.
1906.	W. P. Near, B.A.....	T. Kennard Thomson, C.E.
1906.	W. A. M. Cook.....	Noel Marshall, Esq.

Mining Engineering.

1905. G. S. Scott.....	Hon. W. H. Montague, M.D.
1905. W. A. Begg.....	“
1906. J. A. McKenzie.....	“
1906. W. Huber.....	“

Mechanical Engineering.

1905. W. G. Nicklin.....	Standard Silver Co.
1906. D. W. Marrs.....	“ “ “

Electrical Engineering.

1905. C. E. Sisson.....	Noel Marshall, Esq.
1906. A. H. Hull.....	“ “ “

Mechanical and Electrical Engineering.

1897. A. T. Gray.....	F. A. Riehle, Esq.
1898. F. C. Smallpiece.....	“
1905. C. B. Aylesworth.....	Standard Silver Co.
1906. E. M. Wood.....	“ “ “

Architecture.

1906. A. W. McConnell.....	Hon. W. H. Montague.
----------------------------	----------------------

Analytical and Applied Chemistry.

1906. C. C. Forward.....	Standard Silver Co.
--------------------------	---------------------

Degree of Bachelor of Applied Science.

Date of admission.	Name.	1896. Brodie, W. M.	
		1903. Brereton, W. P.	
1893.	Alison, T. H.	1902. Brandon, E. T.	
1897.*	Angus, R. W.	1899. Boyd, W. H.	
1904.*	Angus, H. H.	1902.*	Boswell, M. C.
1901.	Ardagh, E. G. R.	1903.	Blair, W. J.
1896.	Armstrong, J.	1906.	Begg, W. A.
1897.*	Bain, J. W.	1895.	Beauregard, A. T.
1894.*	Ballantyne, H. F.	1902.	Barrett, R. H.
1906.*	Barber, W.	admission.	Name.
1901.	Barley, J. H.	Date of	

*Degree with honours.

DEGREE OF BACHELOR OF APPLIED SCIENCE.—*Continued.*

Date of
admission. Name.

1906. Brown, T. D.
1895. Bucke, W. A.
1906. Burnham, F. W.
1900. Burnside, J. T. M.
1905. Burwash, N. A.
1905. Campbell, A. J.
1905. Campbell, A. M.
1898. Carpenter, H. S.
1899. Carter, W. E. H.
1903.*Chace, W. G.
1903.*Chadsey, S. B.
1898. Charlton, H. W.
1894.*Chewett, H. J.
1903.*Christie, W.
1905. Christie, U. W.
1906. Coates, P. C.
1905.*Code, T. F.
1900.*Chubbuck, L. B.
1902. Cockburn, J. R.
1900. Coulthard, R. W.
1901. Craig, J. A.
1905. Crerar, S. R.
1906.*Crosby, N. L.
1903.*Culbert, M. T.
1901. Davison, J. E.
1905. Davison, A. E.
1902. DeCew, J. A.
1901. Dickson, G. W.
1901.*Dixon, H. A.
1896. Dobie, J. S.
1902.*Eason, D. E.
1904. Edwards, W. M.
1897.*Elliott, H. P.
1903. Empey, J. M.
1895.*Ewart, J. A.
1904. Fensom, C. J.
1906. Ferguson, G. H.
1906.*Fierheller, H. S.
1905.*Ford, A. L.

Date of
admission. Name.

1901. Foreman, W. E.
1904.*Gaby, F. A.
1903.*Gagné, S.
1904. Gardner, J. C.
1903.*Gibson, A. E.
1904.*Gibson, N. R.
1904. Gibson, W. S.
1904.*Gillespie, P.
1894. Goodwin, J. B.
1899. Grant, W. F.
1898. Gray, A. T.
1905. Gray, W. W.
1905. Greenwood, W. K.
1901. Guy, E.
1897.*Haight, H. V.
1904. Hamilton, J. F.
1905. Hanes, G. S.
1900. Hare, W. A.
1897.*Harkness, A. H.
1906. Harris, C. J.
1902. Harvey, C.
1901. Hemphill, W.
1895. Herald, W. H.
1906.*Heron, J. B.
1906. Hewson, W. G.
1901. Holcroft, H. S.
1896. Hull, H. S.
1894. James, D. D.
1893. James, O. S.
1905. James, E. A.
1905. Jermyn, P. V.
1895.*Job, H. E.
1895. Johnson, S. M.
1902. Johnson, J. A.
1896. Johnson, A. C.
1894.*Keele, J.
1903. Knight, R. H.
1899. Korman, J. S.
1894. Laidlaw, J. T.

*Degree with honours.

DEGREE OF BACHELOR OF APPLIED SCIENCE.—*Concluded.*

Date of admission.	Name.
1893.	Laing, A. T.
1903.	Langmuir, F. L.
1893.*	Laschinger, E. J.
1901.	Latham, R.
1906.	Latornell, A.
1906.	Latornell, A. J.
1893.*	Lawson, W.
1893.	Lea, W. A.
1906.*	Loudon, T. R.
1894.	McAllister, A. L.
1895.	McAllister, J. E.
1893.	McAree, J.
1905.	McAuslan, H. J.
1904.	McBride, A. H.
1905.	McCuaig, O. B.
1893.	McEntee, B.
1905.	McEwen, G. G.
1904.	McFarlane, J. A.
1906.	McFarlane, W. G.
1905.*	McGibbon, C. P.
1896.*	McGowan, J.
1905.	McKay, C. D.
1896.*	McKinnon, H. L.
1903.	McMaster, A. T. C.
1901.	McMillan, J. G.
1894.*	McPherson, A. J.
1895.	McTaggart, A. L.
1902.*	MeVean, H. G.
1897.	Macallum, A. F.
1897.	Macbeth, C. W.
1904.	Macintosh, D.
1905.	Marriott, F. G.
1897.	Martin, T.
1903.*	Matheson, P.
1894.*	Merrill, E. B.
1893.	Milne, C. G.
1896.	Mines, W. H.
1895.*	Minty, W.
1894.	Mitchell, C. H.
1906.	Moffatt, R. W.

Date of admission.	Name.
1900.	Monds, W.
1905.*	Montgomery, R. H.
1906.	Munro, G. R.
1901.	Neelands, E. V.
1904.	Nevitt, I. H.
1904.	Oliver, E. W.
1904.	Pace, J. D.
1905.	Pace, G.
1906.*	Pardoe, W. S.
1905.	Parke, J.
1904.	Patten, B. B.
1906.	Phillips, E. P. A.
1904.	Plunkett, T. H.
1901.	Pope, A. S. H.
1903.*	Powell, G. G.
1902.*	Price, H. W.
1906.	Ramsey, G. L.
1905.	Raymond, D. C.
1906.	Reid, F. B.
1900.*	Revell, G. E.
1900.	Richards, E.
1906.*	Riddell, M. R.
1901.	Roaf, J. R.
1903.	Robertson, H. D.
1898.*	Robinson, A. H. A.
1905.	Roxburgh, G. S.
1905.	Rutherford, F. N.
1902.	Rust, H. P.
1902.	Sauer, M. V.
1901.	Saunders, H. W.
1905.*	Scheibe, H. M.
1900.*	Shanks, T.
1905.	Sheply, J. D.
1895.	Shields, J. D.
1899.	Shipley, A. E.
1906.	Shirriff, C. H.
1903.	Sinclair, D.
1906.	Slater, F. W.
1902.*	Smallpiece, F. C.
1898.	Smiley, R. W.

*Degree with honours.

- | | |
|-------------------------|--------------------------|
| 1904. Smith, H. G. | 1896. Tremaine, R. C. C. |
| 1905. Smither, W. J. | 1905. Trimble, A. V. |
| 1894.*Speller, F. N. | 1905. Tucker, B. B. |
| 1894. Squire, R. H. | 1906.*Turner, W. E. |
| 1902. Stevenson, W. H. | 1900. Wagner, W. E. |
| 1898.*Stull, W. W. | 1906. Wagner, H. L. |
| 1903. Sutherland, W. H. | 1905.*Walker, E. W. |
| 1906. Swan, W. G. | 1906. Watson, J. P. |
| 1903. Teasdale, C. M. | 1898. Weekes, M. B. |
| 1900.*Tennant, D. C. | 1901. Weir, H. M. |
| 1901. Tennant, W. C. | 1906.*Wells, A. F. |
| 1893. Thomson, R. W. | 1905.*Williams, C. G. |
| 1905. Thomson, S. E. | 1899.*Williamson, D. A. |
| 1906. Thomson, L. R. | 1904.*Wilson, N. D. |
| 1901. Thorne, S. M. | 1905. Worthington, W. R. |
| 1901. Thorold, F. W. | 1893.*Wright, C. H. C. |
| 1905. Townsend, C. J. | 1902. Wright, R. T. |
| 1905.*Townsend, D. T. | 1905. Wright, W. F. |
| 1906. Traill, J. J. | 1905.*Young, C. R. |
| 1904. Trees, S. L. | 1903. Zahn, H. |

Degree of Civil Engineer (C.E.).

- | | |
|--------------------------|-------------------------|
| 1898. Alison, T. H. | 1889. Tyrrell, J. W. |
| 1898. Ashbridge, W. T. | 1894. Tyrrell, H. G. |
| 1895. Bowman, A. M. | 1892. Thomson, T. K. |
| 1893. Bowman, F. M. | 1885. Morris, J. L. |
| 1892. Chewett, H. J. | 1896. Moore, J. E. A. |
| 1900. Connor, A. W. | 1898. Mitchell, C. H. |
| 1901. Francis, W. J. | 1901. McDowall, R. |
| 1900. Haultain, H. E. T. | 1895. McAllister, J. E. |
| 1893. Innes, W. L. | 1886. Kennedy, J. H. |

Degree of Mining Engineer (M.E.).

- | | |
|--------------------|----------------------|
| 1897. Bucke, M. A. | 1900. Laidlaw, J. T. |
|--------------------|----------------------|

Degree of Mechanical Engineer (M.E.).

- | | |
|-----------------------|-------------------------|
| 1900. White, A. V. | 1905. Laschinger, E. J. |
| 1901. Johnston, A. C. | |

Degree of Electrical Engineer (E.E.).

- | | |
|-----------------------|----------------------|
| 1896. Ross, R. A. | 1902. Elliott, H. P. |
| 1903. Chubbuck, L. B. | 1905. Hemphill, W. |

GRADUATES.

Graduates are requested to inform the Secretary of changes in their addresses.

1881.

Course.	Name and address.	Occupation.
1. J. L. Morris, C.E., O.L.S.....	Engineer and Surveyor. Pembroke, Ont.	

1882.

1. D. Jeffrey.....	Contractor. Windsor, Missouri.	
1. J. H. Kennedy, C.E., O.L.S....	Chief Engineer, Vancouver, Victoria Midway, B.C.	& Eastern Railway.
1. J. McAree, B.A.Sc., D.T.S.....	(deceased).	

1883.

1. D. Burns, O.L.S.....	Supt. of Construction, A.M. Can. Soc. C.E., Pittsburgh, Pa.	Carnegie Technical Schools.
1. G. H. Duggan.....	Manager, Mexico Heat, Light and M. Can. Soc. C.E., Mexico, Mex.	Power Co.
1. J. W. Tyrrell, C.E., D.L.S.....	Consulting Engineer and Surveyor. Hamilton, Ont.	

1884.

1. W. C. Kirkland.....	Chief Engineer, Drainage Commission New Orleans, La.	of New Orleans.
1. J. McDougall, B.A.....	York County Engineer. A.M., Ist. C.E. York County Municipal Hall, Toronto, Ont.	
1. A. R. Raymer.....	Asst. Chief Engineer, P. & L. E. Ry. Beaver, Pa.	
1. James Robertson, O.L.S.....	Engineer and Surveyor. Glencoe, Ont.	
1. E. W. Stern.....	Weiskopf & Stern, M. Am. Soc. C.E., 68 William St., New York.	Consulting Engineer, Steel Structures, Buildings, etc.

1885.

Course.	Name and address.	Occupation.
1. J. F. Bleakley.....	Civil Engineer. Sullivan Block, Seattle, Wash.	
1. H. J. Bowman, D. & O.L.S.....	Consulting Engineer. M. Can. Soc. C.E., Berlin, Ont.	(County Clerk and Treasurer).
1. E. E. Henderson, O.L.S.....	Civil Engineer. Henderson, P.O., Me.	
1. B. A. Ludgate, O.L.S.....	Asst. Engineer, P. & L. E. Ry. Pittsburgh, Pa.	
1. O. McKay, O.L.S.....	Civil Engineer and Surveyor. Walkerville, Ont.	

1886.

1. A. M. Bowman, D.L.S.....	Consulting and Constructing Engineer. Pittsburgh, Pa.	
1. E. B. Hermon, D. & O.L.S.....	Asst. Engineer Vancouver Power Co. Vancouver, B.C.	
1. Robert Laird, O.L.S.....	Engineer on Construction, Temiskam- Haileybury, Ont.	ing Ry.
1. T. Kennard Thomson, C.E.....	Consulting Engineer. M. Can. Soc. C.E., M. Am. Soc. C.E., 703 Park Row Building, New York.	
1. H. G. Tyrrell, C.E.....	Chief Engineer, A.M. Can. Soc. C.E., 2151 Fulton Ave., Cincinnati, O.	The Brackett Bridge Co.

1887.

1. J. C. Burns (deceased).		
1. A. E. Lott.....	Consulting Railway Engineer, Los Angeles, Cal.	441 Bradbury Building.
1. A. L. McCulloch, O.L.S.....	A.M. Can. Soc. C.E., Nelson, B.C.	City Engineer.
1. F. Martin, M.B., O.L.S.....	Physician.	
1. C. H. Pinhey, D. & O.L.S.....	Engineer for Contractor, Soulanges Coteau Landing.	Canal.
1. J. Rogers, O.L.S.....	Town Engineer. Mitchell, Ont.	

1888.

Course.	Name and address.	Occupation.
1. J. F. Apsey, O.L.S.....	Asst. Div. Engineer, 25 E. North Ave. Baltimore, Md.	Baltimore Sewerage Commission.
1. W. T. Ashbridge, C.E.....	Engineer and Surveyor. Edmonton, Alta.	
1. Edward F. Ball.....	Civil Engineer and Surveyor. A.M. Can. Soc. C.E., 335 Madison Ave., New Yo N.Y.	
1. D. B. Brown, O.L.S.....	Locating Engineer, Quebec, P.Q.	Transcontinental Ry. (G.T.P.).
1. C. M. Canniff.....	Engineer, Expanded Metal and Fire- Toronto. Proofing Co., Ltd.	
1. H. J. Chewett, B.A.Sc., C.E....	Manager, Siche Gas Co. A.M. Can. Soc. C.E., 83½ York St., Toronto, Ont.	
1. J. Gibbons, D. & O.L.S.....	Surveying Staff, Dept. of Interior. Ottawa, Ont.	
1. R. McDowall, O.L.S., C.E....	Town Engineer. A.M. Can. Soc. C.E., Owen Sound, Ont.	
1. G. W. McFarlen, O.L.S.....	City Engineer's Staff. Toronto, Ont.	
1. C. J. Marani.....	49 Cornell St., Cleveland, O.	
1. G. R. Mickle, B.A.....	Professor of Mining Engineering, Toronto, Ont.	School of Practical Science.
1. J. H. Moore, O.L.S.....	Town Engineer. Smith's Falls, Ont.	
1. G. H. Richardson.....	Contractors' Engineer, Hervey Junct., Que.	Transcontinental Ry.
1. K. Rose.....	Manager, Evans Rotary Engine Co. Curry Bldg. Toronto.	of Canada.
1. J. E. Ross, D. & O.L.S.....	Surveying Staff, Dept. of Interior. Kamloops, B.C.	
1. C. H. C. Wright, B.A.Sc.....	Professor of Architecture, Toronto, Ont.	School of Practical Science.
1. B. Carey.....	Toronto, Ont.	

1889.

Course.	Name and address.	Occupation.
1. W. J. Chalmers.....	Draftsman, Office U.S. Asst. Engineer, Pittsburgh, Pa.	
1. W. A. Clement.....	City Engineer. M. Can. Soc. C.E., Vancouver, B.C.	
1. G. F. Hanning.....	Locating Engineer, Transcontinental Winnipeg, Man.	Railway, Lake Abitibi.
1. H. E. T. Haultain, C.E.....	Mining Engineer. Can. Soc. C.E., Nelson, B.C.	
1. J. Irvine.....	Division Engineer, Can. Northern Ry. Wahnapitae, Ont.	
1. D. D. James, B.A., B.A.Sc....	Assistant Engineer, Canadian North- Wahnapitae, Ont.	ern Ry.
1. F. X. Mill (deceased).		
1. H. K. Moberley.....	District Engineer and Surveyor. Moosomin, Sask.	
1. T. R. Rosebrugh, M.A.....	Professor of Electrical Engineering, Toronto, Ont.	School of Practical Science.
1. T. Wickett, M.D.....	Physician. 362 Cannon St. E., Hamilton, Ont.	

1890.

5. W. E. Boustead (deceased).		
1. F. M. Bowman, O.L.S., C.E....	Structural Engineer, Pittsburgh, Pa.	Riter-Conley Mfg. Co.
1. M. A. Bucke, M.E. (deceased).		
1. G. D. Corrigan (deceased).		
1. J. A. Duff, B.A. (deceased).		
1. A. B. English (deceased).		
1. N. L. Garland.....	Garland Manufacturing Co., Toronto, Ont.	76 Bay Street.
1. J. Hutcheon, O.L.S.....	City Engineer. Guelph, Ont.	
1. W. L. Innes, O.L.S., C.E.....	Manager, Canadian Cannery, Ltd. Simcoe, Ont.	
1. E. B. Merrill, B.A., B.A.Sc....	Municipal Power Dpl. Winnipeg, Man.	
1. J. R. Pedder (deceased).		

1890.—Concluded.

Course.	Name and address.	Occupation.
3. R. A. Ross, E.E.....	Ross & Holgate, Consulting Electrical 80 St. Francis Xavier St., Montreal, P.Q.	and Mechanical Engineers.
1. T. H. Wiggins, O.L.S.....	District Surveyor and Engineer, Regina, Sask.	Dept. of Public Works.
1. W. J. Withrow.....	Patent Examiner, Patent Branch, Ottawa, Ont.	Dept. of Agriculture.

1891.

1. H. J. Beatty, O.L.S.....	Engineer and Surveyor. Eganville, Ont.	
1. T. R. Deacon, O.L.S.....	President and General Manager, Winnipeg, Man.	Manitoba Iron Works, Ltd.
1. C. W. Dill.....	General Manager, A.M. Can. Soc. C.E., Toronto, Ont.	Constructing and Paving Co., McKinnon Building.
5. O. S. James, B.A.Sc.....	Chemist for J. E. Wilkinson Co. Toronto, Ont.	Gold and Silver Refiners.
1. A. Lane (deceased).		71 Lombard Street.
1. J. E. McAllister, B.A.Sc., C.E.	Manager British Columbia Copper Greenwood, B.C.	Co., Ltd.
3. E. B. Merrill, B.A., B.A.Sc....	Electrical Engineer, Power Dept. Winnipeg, Man.	
1. J. E. A. Moore, C.E.....	Engineer, Wellman-Seaver-Morgan Cleveland, O.	Engineering Co.
1. W. Newman, O.L.S.....	Consulting Engineer. A.M. Can. Soc. C.E., Windsor, Ont.	
1. J. K. Robinson (deceased).		
1. W. B. Russel.....	Chief Engineer, North Bay, Ont.	Temiscaming & Northern Ry.
1. G. E. Silvester, O.L.S.....	Chief Engineer, Canadian Copper Co. Copper Cliff, Ont.	
1. H. D. Symmes.....	Contractor, Niagara Falls, Ont.	Ontario Power Co.

1892.

1. J. R. Allan, O.L.S.....	Ranchman. Macleod, Alta.	
1. T. H. Alison, B.A.Sc., C.E..	Chief Engineer, Augustus Smith Co. 149 Broadway. New York.	

1892.—*Concluded.*

Course.	Name and address.	Occupation.
1. A. G. Anderson.....	Port Dover, Ont.	
1. C. Fairchild, D. & O.L.S.....	Surveying Staff, Dept. of Interior. Brantford, Ont.	
1. J. B. Goodwin, B.A.Sc.....	Asst. Engineer, McCall's Ferry McCall's Ferry, Pa.	Power Co.
4. C. E. Langley.....	Langley & Langley, Architects. Mail Building, Toronto, Ont.	
1. A. T. Laing, B.A.Sc.....	Registrar, Toronto, Ont.	School of Practical Science.
1. E. J. Laschinger, B.A.Sc., M.E.	Mechanical Engineer, Estimating Johannesburg, Transvaal, S.A.	Branch, Consolidated Gold Fields.
5. W. Lawson, B.A.Sc.....	Manager, Stirling Sugar Co. Stirling, Col.	
3. W. A. Lee, B.A.Sc. (deceased).		
1. B. McEntee, B.A.Sc.....	28 Queen St. E., Toronto.	
3. C. G. Milne, B.A.Sc.....	Chief Engineer, Hamilton Bridge Hamilton, Ont.	Works Co.
1. Chas. H. Mitchell, B.A.Sc.....	Consulting Hydro-electric Engineer, C.E., M. Can. Soc., C.E., M. Am. Soc. C.E.,	Toronto.
1. N. L. Playfair.....	Supt. Playfair Lumber Co. Midland, Ont.	
1. J. M. Prentice (deceased).		
1. J. A. Ross.....	Designer L.S. & M.S. Railway. Cleveland, O.	
1. Albert N. Smith.....	Superintending Representative of 330 Main St., Pittsburgh, Pa.	Julian Kennedy, Consulting En- gineer.
1. R. W. Thompson, B.A.Sc.....	Mine Captain, Consolidated Gold Johannesburg, Transvaal, S.A.	Fields of South Africa.
3. A. V. White, M.E.....	Mechanical Engineer. Toronto, Ont.	

1893.

Course.	Name and address.	Occupation.
1. A. G. Ardagh.....	Engineering Staff C.P.R. Montreal, Que.	
4.*H. F. Ballantyne, B.A.Sc.....	Architect. 244 Fifth Ave., New York.	
1. G. L. Brown, O.L.S.....	County Engineer, Dundas, Stormont Morrisburg, Ont. and Glengarry.	
1.*L. C. Charlesworth, D.L.S.....	Director of Surveys for Alberta. Edmonton, Alta.	
1. T. H. Dunn, O.L.S.....	Engineer and Surveyor. Winchester, Ont.	
1. J. M. R. Fairbairn, P.L.S.....	Division Engineer, C.P.R. Toronto, Ont.	
4.*W. Fingland.....	Architect and Structural Engineer. 317 Portage Ave., Winnipeg, Man.	
1. C. Forester,	Toronto, Ont.	
1.*Walter J. Francis, C.E.....	Assistant Manager, A.M., Can. Soc. C.E., Dominion Engineering and Con- M. Am. Soc. C.E., struction Co. Montreal, Que.	
3.*A. R. Goldie.....	Manager, Goldie & McCulloch Galt, Ont. Engine Works.	
3. S. C. Hanly.....	Mechanical Engineer. Midland, Ont.	
4.*J. Keele, B.A.Sc.....	Geological Survey of Canada. Ottawa, Ont.	
1. J. T. Laidlaw, B.A.Sc. M.E....	Firm of McVitte & Laidlaw, Mining Cranbrook, B.C. Engineers and Surveyors.	
3. F. L. Lash.....	Manager, Batavia Electric Light Co. Batavia, Java.	
1. A. L. McAllister, B.A.Sc.....	Draftsman, 149 Milton St., American Steel Corporation. Brooklyn, N.Y.	
1. T. J. McFarlen.....	Chemist. 80 Waverley Rd., Toronto, Ont.	
1.*A. J. McPherson, B.A.Sc.....	Assistant Chief Engineer, D.L.S., Department of Public Works. Regina, Sask.	

*Diploma with honours.

1893.—*Concluded.*

Course.	Name and address.	Occupation.
1. A. F. Macallum, B.A.Sc.....	Toronto, Ont.	Consulting Engineer, 62 Canada Life Building.
1. W. T. Main.....	Baraboo, Wis.	Div. Engineer's Office, Chicago & North Western Ry. Co.
1. V. G. Marani.....	Cleveland, Ohio.	Assistant Engineer Cleveland Gas, Light & Coke Co.
1. W. Mines, B.A.Sc.....	Cleveland, Ohio.	With Brown Hoisting Co.
3.*J. M. Robertson.....	Montreal, P.Q.	Superintendent, Repair and Testing Dept., Montreal Light, Heat and Power Co.
1. R. Russell.....	Pembroke, Ont.	Civil Engineer.
1.*F. N. Speller, B.A.Sc.....	Pittsburgh, Pa.	Metallurgical Engineer, National Tube Co.
1. R. H. Squire, B.A.Sc., O.L.S...	Brantford, Ont.	Engineer, Ontario Portland Cement 54 Market St., Co.
1. W. V. Taylor, O.L.S.....	Montreal, P.Q.	Dominion Engineering and Construc- A.M. Can. Soc. C.E., tion Co.
1.*R. B. Watson.....	Dawson, Yukon Territory.	Mining Engineer.

1894.

3.*R. W. Angus, B.A.Sc.....	Toronto, Ont.	Professor of Mechanical Engineering, University of Toronto.
1. H. F. Barker,	Box 31, Halifax, N.S.	
1. A. T. Beauregard, B.A.Sc.....	Newark, N.J.	Laboratory Engineer, Public Service Corporation of New Jersey.
1. A. E. Bergey.....	Pittsburgh, Pa.	With American Bridge Co., Keystone Branch.
3. D. G. Boyd.....	Toronto, Ont.	Draftsman, Public Works Dept.
3. W. A. Bucke.....	Toronto, Ont.	With Canadian General Electric Co.
1. J. Chalmers, O.L.S.....	Edmonton, Alta.	Structural Engineer, A.M. Can. Soc. C.E., Dept. of Public Works.

*Diploma with honours.

1894.—*Concluded.*

Course.	Name and address.	Occupation.
4.*J. A. Ewart, B.A.Sc.....	The Architectural and Engineering 193 Sparks St., Ottawa, Ont.	Co. of Canada.
3. W. J. Herald, B.A.Sc.....	With Dominion Iron & Steel Co. Sydney, N.S.	
3. H. E. Job, B.A.Sc.....	Manager, Toronto and Hamilton Hamilton, Ont.	Electric Co.
3. A. C. Johnston, B.A.Sc., M.E..	Consulting Mechanical Engineer.	
1. S. M. Johnston, B.A.Sc., P.L.S.	City Engineer. Greenwood, B.C.	
1. J. E. Jones.....	Manager, M. H. Treadwell & Co., Pittsburgh, Pa.	Engineers, Founders and Ma- chinists.
3. N. M. Lash.....	Asst. Electrical Engineer, Montreal, P.Q.	Bell Telephone Co.
1.*A. L. McTaggart, B.A.Sc.....	Office of A. G. McKee, Cleveland, O.	Consulting Engineer.
3.*W. Minty, B.A.Sc.....	General Manager Moss Bay Hematite, Workington, Eng.	Iron and Steel Co., Ltd.
3. C. J. Nicholson,	Preston, Ont.	
1. H. Rolph.....	Montreal Rep. of John S. Metcalf Co., 146 St. James St., Montreal, Que.	Chicago.
1. J. D. Shields, B.A.Sc.....	Sewer Engineer, Staff of City Toronto, Ont.	Engineer.
3. A. K. Spotton.....	Chief Engineer, Galt, Ont.	Goldie & McCulloch Engine Works.
1. Angus Smith, O.L.S.....	City Engineer. A.M. Can. Soc. C.E., Regina, Sask.	
3. R. T. Wright, B.A.Sc.....	Draftsman, Westinghouse Machine Co. Pittsburgh, Pa.	

1895.

1. J. Armstrong, B.A.Sc.....	Locating Engineer, G.T.P. Surveys. Edmonton, N.W.T.
3. A. E. Blackwood.....	Manager, New York Office, 42 Broadway, New York.
	Sullivan Machinery Co.

*Diploma with honours.

1895.—*Concluded.*

Course.	Name and address.	Occupation.
1. E. J. Boswell, D.L.S.....	Winnipeg, Man.	Oaklands, Cal.
3. G. Brebner (deceased).		
3. W. M. Brodie, B.A.Sc.....	Pittsburgh, Pa.	With the Green Engineering Co. of Chicago.
3. L. L. Brown.....	77 Rutland Rd., Brooklyn, N.Y.	Supt., The Foundation Co. 35 Nassau St.
4. R. J. Campbell.....	Chicago, Ill.	Artist, Chicago Tribune.
3. A. W. Connor, B.A., C.E.....	Toronto, Ont.	Firm of Connor, Clark & Monds, Consulting Engineers.
1. J. S. Dobie, B.A.Sc., O.L.S....	Regina, Sask.	Director of Surveys for Saskatchewan.
1. F. W. Guernsey.....	Rossland, B.C.	Engineer, War Eagle Mining Co.
4.*A. H. Harkness, B.A.Sc.....	Toronto, Ont.	Engineering Department, Canada Foundry Co.
3. H. S. Hull, B.A.Sc.....	Johnstown, Pa.	Structural Drawing, Cambria Steel Co.
3.*J. McGowan, B.A., B.A.Sc....	Toronto, Ont.	Associate Professor of Applied Mechanics, University of Toronto.
3. W. N. McKay.....	Atwood, Ont.	Manager, Bank of Hamilton.
3. H. L. McKinnon, B.A.Sc.....	Cleveland, O.	With the Brown Hoisting Machine Co.
1. W. W. Meadows, D. & O.L.S....	Maple Creek, Sask.	Engineer and Surveyor.
1. F. J. Robinson, D. & O.L.S....	Regina, Sask.	Deputy Commissioner of Public Works, Saskatchewan.
3. F. T. Stocking.....	Victor, Col.	With Pike's Peak Power Co.
3. R. C. C. Tremaine, B.A.Sc.....		(deceased).

1896.

2.*J. W. Bain, B.A.Sc.....	Toronto, Ont.	Associate Professor of Applied Chemistry, University of Toronto.
2. L. T. Burwash.....	Whitehorse, Yukon.	Mining Inspector.

*Diploma with honours.

1896.—*Concluded.*

Course.	Name and address.	Occupation.
3.*G. M. Campbell.....	Asst. Supt. Western Electric Co. Chicago, Ill.	
2. J. A. Decew, B.A.Sc.....	Consulting Chemical Engineer. 14 Sun Life Building, Montreal, Que.	
3.*H. P. Elliott, B.A.Sc., M.E....	Electrical Engineer, Westinghouse Pittsburgh, Pa.	Electric and Mfg. Co.
3. W. C. Gurney.....	Vice-President, Gurney Foundry Co. Toronto, Ont.	
3.*H. V. Haight, B.A.Sc.....	Engineer, Canadian Rand Drill Co. Sherbrooke, P.Q.	
1. W. F. Laing (deceased).		
3. R. R. Lawrie (deceased).		
3. C. MacBeth, B.A.Sc.....	Assistant Engineer, Geo. Bay Ship Ottawa, Ont.	Canal.
3. J. A. McMurchy.....	Mechanical Engineer, Pittsburgh, Pa.	Westinghouse Machine Co.
1. T. Martin, B.A.Sc.....	Resident Engineer, C.P.R. Cranbrook, B.C.	
3. R. R. Scheibe.....	With Toronto Engraving Co. Toronto, Ont.	

1897.

2. E. Andrews, B.Sc.....	Res. Engineer, Blaenau, Festiniog, N. Wales.	Main Offerin Slate Quarry Co.
2.*J. A. Bow.....	Draftsman, Washoe Smelter. Anaconda, Mon.	
1. H. S. Carpenter, B.A.Sc., O.L.S.	District Surveyor & Engineer, Regina, Sask.	Dept. of Public Works.
5. H. W. Charlton, B.A.Sc.....	Assistant Analyst at Experimental Ottawa, Ont.	Farm.
4.*E. A. Forward.....	Assistant Engineer, A.M. Can. Soc. C.E., Iroquois, Ont.	Georgian Bay Canal Survey.
3.*A. T. Gray, B.A.Sc.....	With General Electric Co. Schenectady, N.Y.	
3. W. A. B. Hicks.....	With Lackawanna Steel Co. Buffalo, N.Y.	

*Diploma with honours.

1897.—Concluded.

Course.	Name and address.	Occupation.
4. C. F. King.....	Geological Survey of Canada. Hamilton, Ont.	
1. H. W. Proudfoot (deceased).		
2.*A. H. A. Robinson, B.A.Sc....	Government Inspector of Mines, Cobalt, Ont.	Temiscaming District.
4. W. F. Scott.....	Structural Engineer, Toronto, Ont.	
3.*W. R. Smiley, B.A.Sc.....	With Wellman-Seaver-Morgan En- Cleveland, Ohio.	gineering Co.
2.*W. W. Stull, B.A.Sc., O.L.S...	Surveyor and Mining Engineer. Sudbury, Ont.	
1.*M. B. Weekes, B.A.Sc., D.L.S..	Topographical Surveys Branch, Ottawa, Ont.	Dept. of the Interior.
1. E. A. Weldon.....	Provincial Land Surveyor's Office. Winnipeg, Man.	

1898.

1. W. H. Boyd, B.A.Sc.....	Geological Survey of Canada. Ottawa, Ont.	
2. W. E. H. Carter, B.A.Sc.....	E. T. Carter & Co., Toronto, Ont.	85 Front Street East.
3. E. H. Darling.....	With Hamilton Bridge Works Co, A.M. Can. Soc. C.E., Hamilton, Ont.	
1. W. F. Grant, B.A.Sc.....	Engineer for H. D. Symmes, Niagara Falls, Ont.	Contractor, Ontario Power Co.
1. T. S. Kormann, B.A.Sc.....	Manager, Korman Brewing Co. Toronto, Ont.	
3. J. E. Lavrock.....	Draftsman, Hermon & Burwell. Vancouver, B.C.	
4. D. Macintosh, B.A.Sc., B. Arch	Firm of Hoyt & Mackintosh, Baltimore, Md.	Architects, 11 East Pleasant St.
1. F. W. McNaughton, O.L.S....	Deputy Minister of Public Works. Winnipeg, Man.	
1. J. H. Shaw, O.L.S.....	Surveyor. North Bay, Ont.	
3. A. E. Shipley, B.A.Sc.....	Manager, Nelson Coke & Gas Co. Nelson, B.C.	
3.*F. C. Smallpiece, B.A.Sc.....	With Canadian General Electric Co., Peterboro, Ont.....	Steam Turbine Dept.

*Diploma with honours.

1898.—*Concluded.*

Course.	Name and address.	Occupation.
1. R. W. Smith, P.L.S.....	Revelstoke, B.C.	Surveyor.
1.*J. A. Stewart, M.A.....	Rankin, Pa.	Estimating and Designing Dept., McClintic-Marshall Construction Co.
1.*H. L. Vercoe.....	Montreal, Que.	Chief Draftsman, Grand Trunk Pacific Ry.
3. T. A. Wilkinson.....	New York, N.Y.	Assistant Statistician, Westinghouse Church Kerr Co.
3. D. A. Williamson, B.A.Sc.....	Hamilton, Ont.	With Hamilton Bridge Works Co.

1899.

3.*T. Barber.....	Meaford, Ont.	Hydraulic Engineer, Georgian Foundry.
2. J. T. M. Burnside, B.A.Sc.....	Toronto, Ont.	Engineering Staff, McKenzie, Mann Ry. system.
3. L. B. Chubbuck, B.A.Sc.....	Pittsburgh, Pa.	Engineering Dept., Westinghouse Electric and Mfg. Co.
2. G. A. Clothier.....	Rossland, B.C.	Engineer, Le Roy Mining Co.
1. C. Cooper.....	Carlyle, Sask.	Surveyor.
2. R. W. Coulthard, B.A.Sc.....	Fernie, B.C.	Chief Chemist, Crow's Nest Pass Coal Co.
3. J. A. Craig, B.A.Sc.....	Toronto, Ont.	Office of Delano-Osborne Engineering Co.
2. J. C. Elliott,	Kelso, Ont.	
3. W. E. Foreman, B.A.Sc.....	Pittsburgh, Pa.	Construction Dept., Westinghouse Electric and Mfg. Co.
3. E. Guy, B.A.Sc.....	Industry, Pa.	Engineering Dept., Westinghouse Electric and Mfg. Co.
3.*W. Almon Hare, B.A.Sc.....	Toronto, Ont.	Manager, The Hare Engineering Co. A.M. Can. Soc. C.E.,
1. R. Latham, B.A.Sc.....	Hamilton, Ont.	Asst. Engineer, T. H. & B. Ry.
3. W. Monds, B.A.Sc.....	36 Toronto St., Toronto, Ont.	Firm of Connor, Clark & Monds, Consulting Engineers.

*Diploma with honours.

1899.—*Concluded.*

Course.	Name and address.	Occupation.
3. A. S. H. Pope, B.A.Sc.....	Electrical Eng. Dept., Westinghouse Pittsburgh, Pa.	Electric and Mfg. Co.
1. J. Patterson, B.A.....	Professor of Physics, Muir Central Allahabad, India.	College.
2.*G. E. Revell, B.A.Sc.....	Nelson, B.C.	
3.*E. Richards, B.A.Sc.....	Electrical Engineer Hydro-Electric Toronto, Ont.	Power Commission.
3. G. A. Saunders.....	With Westinghouse Electric & Mfg. Wilkesburg, N.Y.	Co.
1.*T. Shanks, B.A.Sc., D.L.S.....	Topographical Surveys Branch, Ottawa, Ont.	Dept. of the Interior.
1.*D. C. Tennant, B.A.Sc.....	With Dominion Bridge Co. Montreal, P.Q.	
3. W. W. VanEvery.....	Somerville & Van Every, Federal Life Bldg., Hamilton, Ont.	Consulting Engineers.
2. G. H. Watt, D.L.S.....	Topographical Surveys Branch, Ottawa, Ont.	Dept. of the Interior.
3. W. E. Wagner, B.A.Sc.....	Res. Engineer, East Alton, Ill.	Equitable Powder Mfg. Co.
3. E. Yeates.....	London Machine Tool Co. London, Ont.	

1900.

1. J. L. Allen.....	Office of Provincial Engineer. A.M. Can. Soc. C.E., Halifax, N.S.	
2. E. G. R. Ardagh, B.A.Sc.....	Lecturer in Applied Chemistry. Toronto, Ont.	University of Toronto.
3. J. A. Bain.....	Dept. of Public Works of Canada. Ottawa, Ont.	
3. J. H. Barley, B.A.Sc.....	Canadian Westinghouse Co. Hamilton, Ont.	
2.*M. C. Boswell, M.A., Ph.D....	Lecturer in Organic Chemistry, Toronto, Ont.	University of Toronto.
1. L. T. Bray, D. & O.L.S.....	Surveyor. Amherstburg, Ont.	

*Diploma with honours.

1900.—Continued.

Course.	Name and address.	Occupation.
3. J. Clark.....	Electrician, Corapotes, Pa.	P. & L. E. R.R.
2. J. E. Davison, B.A.Sc.....	Engineering Staff, Can. Northern Ry. Toronto, Ont.	
3. E. D. Dickinson.....	With General Electric Co. Schenectady, N.Y.	
3. G. W. Dickson, B.A.Sc.....	With Robertson Machinery Co. Welland, Ont.	
2.*H. A. Dixon, B.A.Sc., M.L.S...	Engineering Staff, Winnipeg, Man.	Can. Northern Ry.
2. C. H. Fullerton, O.L.S.....	Surveyor. New Liskeard, Ont.	
3. W. S. Guest.....	Post-Graduate Course, Toronto, Ont.	School of Practical Science.
3. W. Hemphill, B.A.Sc.....	With Cataract Power and Conduit 718 Fidelity Building, Buffalo, N.Y.	Co.
3. S. E. M. Henderson.....	Designing Engineer, Schenectady, N.Y.	General Electric Co.
3. J. A. Henry.....	Engineering Dept., Schenectady, N.Y.	General Electric Co.
2. H. S. Holcroft, B.A.Sc., D.L.S..	Surveyor. Toronto, Ont.	
3. H. A. Johnston.....	Mechanical Engineer, 148 Clinton St. Toronto, Ont.	
3. J. C. Johnston.....	Chemist, Boston, Mass.	Warren Bituminous Paving Co.
2.*J. A. Johnston, B.A.Sc.....	Contractor. Ignace, Ont.	
2. R. E. McArthur.....	Resident Engineer, C.P.R. Calgary, Alta.	
2. J. G. McMillan, B.A.Sc.....	Mining Engineer. Haileybury, Ont.	
3. L. Haun Miller.....	McMyler Mfg. Co. Cleveland, O.	
2. E. V. Neelands, B.A.Sc.....	Supt. Black Queen Crystal, Colo.	Mining and Milling Co.
1.*E. H. Phillips, D.L.S.....	Topographical Surveys Branch, Ottawa, Ont.	Dept. of the Interior.

*Diploma with honours.

1900.—*Concluded.*

Course.	Name and address.	Occupation.
2. J. R. Roaf, B.A.Sc.....	Draftsman, Crow's Nest Pass Coal Co. Michel, B.C.	
3.*C. H. E. Rounthwaite.....	Draftsman, North Bay, Ont.	Party No. 1, G.T.P. Ry.
2. H. W. Saunders, B.A.Sc.....	Engineering Dept., Gary, W. Va.	U.S. Coal & Coke Co.
1. A. Taylor, D.L.S. & M.L.S.....	Engineer and Surveyor. Winnipeg, Man.	
1. W. C. Tennant, B.A.Sc. (deceased).		
2. S. M. Thorne, B.A.Sc.....	Engineering Staff, Clifton, Arizona.	Arizona Copper Co.
1. F. W. Thorold, B.A.Sc.....	Municipal Engineering & Contracting Calgary, Alta.	Co.
1. H. M. Weir, B.A.Sc.....	With Londonderry Iron & Mining Co. Londonderry, N.S.	
3. F. D. Withrow.....	Patent Examiner, Ottawa, Ont.	Dept. of Agriculture.

1901.

1. R. H. Barrett, B.A.Sc., O.L.S.	(deceased).
3. W. G. Beatty.....	Manager, Beatty Bros., Implement Fergus, Ont. Manufacturers.
3. G. M. Bertram.....	Representative of the Sullivan Ma- Scranton, Pa. chinery Co.
3. W. J. Bowers.....	(deceased). Toronto, Ont.
3. E. T. J. Brandon, B.A.Sc.....	Chief Draftsman, Hugh L. Cooper, 60 Wall St., Consulting Engineers. New York.
3. W. P. Brereton, B.A.Sc.....	Municipal Power Dept. Winnipeg, Man.
3. J. T. Broughton.....	Chief Engineer, Scottdale, Pa. Scottdale Foundry & Machine Co.
3.*W. G. Chase, B.A.Sc.....	Firm of Smith, Kerry & Chase. Confed. Life Bldg., Toronto.
3. A. G. Christie.....	Steam Turbine Engineer, 71 Broadway, New York. Allis-Chalmers Co.
3. J. R. Cockburn, B.A.Sc.....	Lecturer in Descriptive Geometry, Toronto, Ont. University of Toronto.

*Diploma with honours.

1901.—*Concluded.*

Course.	Name and address.	Occupation.
1. W. A. Duff.....	Chief Draftsman, Bridge Dept. Ottawa, Ont.	Transcontinental Ry.
2.*D. E. Eason, B.A.Sc.....	Engineering Staff, Peterboro, Ont.	Trent Valley Canal.
1.*S. Gagné, B.A.Sc.....	Engineer-in-Charge, Toronto and A.M., Can. Soc. C.E., 23 Scott St., Toronto, Ont	Niagara Power Co., Toronto, Niagara & Western Ry., etc.
3. N. R. Gibson, B.A.Sc.....	Asst. Engineer, Winnipeg, Man.	Power Const. Dept.
1. C. Harvey, B.A.Sc., D.L.S.....	Consulting Engineer and Surveyor. Kelowna, B.C.	
2. A. T. E. Hamer.....	Engineering Staff, Wahnapitae, Ont.	Can. Northern Ry. Co.
2. F. C. Jackson.....	Res. Engineer, Temiskaming and North Bay, Ont.	Northern Ontario Ry.
3.*A. Laidlaw.....	Asst. Engineer, Trussed Concrete Detroit, Mich.	Steel Co.
3. W. C. Lumbers.....	Engineering Staff, C.P.R. Calgary, Alta.	
3. A. C. Macdougall.....	Asst. Supt., Massena, N.Y.	Aluminium Co. of America.
3. A. T. C. McMaster, B.A.Sc....	Assistant Engineer, Clifton, Arizona.	Arizona Copper Co.
1. G. MacMillan.....	Topographical Surveys Branch, Ottawa, Ont.	Dept. of Interior.
3.*H. G. McVean, B.A.Sc.....	Engineering Staff of W. Chipman, Gananoque, Ont.	C.E.
2. W. C. Matheson.....	With McKenzie, Mann Co. Toronto, Ont.	
3. H. T. Middleton.....	Assistant Superintendent, Massena, N.Y.	Indestructible Fibre Co.
2. J. L. R. Parsons, B.A., D.L.S..	Engineer and Surveyor. Winnipeg, Man.	
1. G. H. Power.....	Resident Engineer, Waterworks and Prince Albert, Sask.	Sewers.
3.*H. W. Price, B.A.Sc.....	Lecturer in Electrical Engineering, Toronto, Ont.	Faculty of Applied Science,
1. H. P. Rust, B.A.Sc.....	Assistant Engineer, Electrical A.M., Can. Soc. C.E., Niagara Falls, Ont.	Development Co.

*Diploma with honours.

1901—*Concluded.*

Course.	Name and address.	Occupation.
3. M. V. Sauer, B.A.Sc.....	Assistant Engineer, Niagara Falls, Ont.	Niagara Falls Power Co.
3. W. H. Stevenson, B.A.Sc.....	General Inspector, Chicago, Ill.	Griffin Wheel Co.
1. R. D. Willson.....	Engineering Staff, Winnipeg, Man.	Canadian Northern Ry. Co.

1902.

3.*H. G. Barber.....	Topographical Surveys Branch, Ottawa, Ont.	Department of the Interior.
1. W. J. Blair, B.A.Sc., D. & O.L.S..	Blair, Sinclair & Smith, New Liskeard, Ont.	Engineers and Land Surveyors.
3. J. M. Brown.....	With Westinghouse Machine Co., Pittsburgh, Pa.	Steam Turbine Dept.
2. W. G. Campbell.....	Toronto, Ont.	
2. A. R. Campbell.....	Office of Willis Chipman, C.E. Toronto, Ont.	
3. C. G. Carmichael.....	Supt. Standardizing Laboratory. 4425 Floral Ave., Cincinnati, O.	Bullock Electric Mfg. Co.
2.*W. Christie, B.A.Sc.....	Ast. to H. W. Selby, D.L.S. Markerville, Alta.	
2. F. T. Conlon.....	Welland Canal Engineering Staff. Thorold, Ont.	
3. H. V. Connor.....	With Westinghouse Electric and Mfg. Pittsburgh, Pa.	Co.
2.*M. T. Culbert.....	Mining Engineer. Cobalt, Ont.	
2. R. Cumming.....	Engineering Staff, Toronto, Ont.	Haney & Miller, Contractors.
1. W. E. Douglas, B.A.....	Office of J. H. McKnight Construc- tion Co. Toronto, Ont.	
3.*R. J. Dunlop.....	With Canadian Westinghouse Co. Toronto, Ont.	
2. W. M. Edwards, B.A.Sc.....	H. L. Cooper, Consulting Engineer. 60 Wall St., New York.	

*Diploma with honours.

1902—Continued.

Course.	Name and address.	Occupation.
3. W. Elwell.....	Topographical Surveys Branch, Ottawa, Ont.	Department of the Interior.
2. J. M. Empey, B.A.Sc., D.L.S....	Topographical Surveys Branch, Ottawa, Ont.	Department of the Interior.
2.*D. L. H. Forbes.....	Chief Engineer, Clifton, Arizona.	Arizona Copper Co.
1.*A. E. Gibson, B.A.Sc.....	Office of Hancy & Miller, Toronto, Ont.	Engineers and Contractors.
3. A. C. Goodwin.....	Draftsman, New Kensington, Pa.	Pittsburgh Reduction Co.
3. C. P. Henwood.....	Draftsman, Middleton, Pa.	National Tube Co.
3. D. M. Johnston.....	Manager, Volta Electric Repair Toronto, Ont.	Works.
2. R. H. Knight, B.A.Sc., D.L.S..	Drascoll & Knight, Edmonton, Alta.	Engineers and Surveyors.
5.*F. L. Langmuir, B.A.Sc., Ph.D. (Freiburg i/B.)	Worshipful Co. of Toronto, Ont.	Leather Seller's Tanning School.
3. A. H. McBride, B.A.Sc.....	Electrical Engineer, Toronto, Ont.	Hydroelectric Power Commission.
1. A. L. McLennan, D.L.S.....	Office of J. McDougall, C.E., Toronto, Ont.	York Co. Engineer.
3. J. T. Mackay.....	Student in Faculty of Medicine, Toronto, Ont.	University of Toronto.
3. J. F. S. Madden.....	Erecting Engineering Dept., Toronto, Ont.	Can. Gen. Electric Co.
3.*C. H. Marrs.....	Draftsman, Hamilton Bridge Co. Hamilton, Ont.	
3. P. Mathison, B.A.Sc.....	With Westinghouse Electric and Mfg. Pittsburgh, Pa.	Co.
3. R. S. Mennie.....	With Crucible Steel Co. of America. Pittsburgh, Pa.	
2. H. H. Moore, D.L.S.....	Dominion Land Surveyor and En- Calgary, Alta.	gineer.
1.*T. S. Nash.....	Topographical Surveys Branch, Ottawa, Ont.	Department of the Interior.
1. G. G. Powell, B.A.Sc.....	Asst. to General Manager, Toronto, Ont.	Constructing and Paving Co.

*Diploma with honours.

1902—Continued.

Course.	Name and address.	Occupation.
1.*W. F. Ratz, D.L.S.....	International Boundary Commission, Ottawa, Ont.	Department of the Interior.
3. H. D. Robertson, B.A.Sc.....	Haney & Miller, Toronto, Ont.	Engineers and Contractors.
3.*D. Sinclair, B.A.Sc.....	Sinclair & Smith, New Liskeard, Ont.	Engineers and Surveyors.
2.*I. J. Steele.....	Transcontinental Ry. Ottawa, Ont.	
3. W. H. Sutherland, B.A.Sc.....	Assistant Engineer, Montreal, Que.	Montreal Water and Power Co.
3.*T. Taylor.....	Engineering Dept., Can. Foundry Toronto, Ont.	Co.
2.*C. M. Teasdale.....	Surveyor for Columbia River Lumber Golden, B.C.	Co.
3. A. A. Wanless.....	Shop Supt., Nova Scotia Steel and Sydney Mines, N.S.	Coal Co.
3. H. J. Zahn, B.A.Sc.....	With Bollinger Bros., Pittsburgh, Pa.	Contracting Engineers.

1903.

3. H. G. Acres.....	Hydraulic Engineer, Toronto, Ont.	Hydroelectro Power Commission.
1. J. G. R. Alison.....	With Riter-Conley Mfg. Co. Salt Lake City, Utah.	
3.*H. H. Angus, B.A.Sc.....	With Westinghouse Machine Co. East Pittsburgh, Pa.	
3. J. A. Beatty.....	Dominion Eng. & Construction Co. Peterborough, Ont.	
3.*J. Breslove.....	Steam Turbine Engineer, West- inghouse Machine Co. East Pittsburgh, Pa.	
2. J. H. Burd, O.L.S.....	Surveyor. Sudbury, Ont.	
1.*E. L. Burgess, D.L.S.....	Topographical Surveys Branch, Ottawa, Ont.	Department of the Interior.
2. N. A. Burwash.....	Surveyor. White Horse, Yukon.	
1. F. F. Clarke, D. & O.L.S.....	Staff of C.N. Ry. Toronto, Ont.	

*Diploma with honours.

1903—Continued.

Course.	Name and address.	Occupation.
2. C. L. Coulson.....	Assistant to Geo. Ross, C.E. Welland, Ont.	
3.*A. E. Davison, B.A.Sc.....	Engineering Staff, Niagara Falls Niagara Falls, N.Y.	Hydraulic Power & Mfg. Co.
3. C. J. Fensom, B.A.Sc.....	Consulting Mechanical Engineer. Toronto, Ont.	
2.*E. O. Fuce, O.L.S.....	Resident Engineer, Galt, Ont.	Galt Sewerage System.
3.*F. A. Gaby, B.A.Sc.....	Hydroelectric Power Commission. Toronto, Ont.	
3. R. E. George.....	Electrical and Gas Engineer, Dover, N.H.	The United Gas & Electric Co.
1. J. C. Gardner, B.A.Sc.....	Railway Engineer. Arica, Chili.	
1.*P. Gillespie, B.A.Sc.....	Lecturer in Theory of Construction, Toronto, Ont.	University of Toronto.
1. W. A. Gourlay.....	Engineering Staff, C.P.R. Toronto, Ont.	
2. J. F. Hamilton, B.A.Sc.....	Irrigation Office, Calgary, Alta.	Dept. of the Interior.
2. G. S. Hanes, B.A.Sc.....	City Engineer. Windsor, Ont.	
5.*J. A. Horton.....	Chemist, Massena, N.Y.	Aluminium Co. of America,
2. F. Y. Harcourt, B.A.....	Ontario Niagara Falls Power Co. Niagara Falls, Ont.	
1. L. J. Hayes.....	Trussed Concrete Steel Co., Detroit, Mich.	Wayne County Bank Building.
1.*F. D. Henderson.....	Topographical Surveys Branch, Ottawa, Ont.	Department of the Interior.
3. J. G. Jackson.....	Engineering Department, 55 Duane St., New York, N.Y.	New York Edison Co.
3. C. K. Johnston.....	Merchant. Pefferlaw, Ont.	
1. H. Johnston, O.L.S.....	Davis & Johnston, Berlin, Ont.	Civil Engineers and Surveyors.
3. A. G. Lang.....	George St., Toronto.	

*Diploma with honours.

1903—Continued.

Course.	Name and address.	Occupation.
1.*A. J. Latornell, B.A.Sc.....	Ont.	
1.*H. J. McAuslan, B.A.Sc., O.L.S Staff of T. & N. O. Ry.	North Bay, Ont.	
3. J. A. McFarlane, B.A.Sc.....	Hamilton Bridge Works Co. Hamilton, Ont.	
1.*A. L. McNaughton.....	Topographical Surveys Branch, Ottawa, Ont.	Department of the Interior.
5.*F. G. Marriott, B.A.Sc.....	Chemist, City Engineer's Dept. Toronto, Ont.	
3.*C. A. Maus.....	Paris, Ont.	
3.*M. L. Miller.....	Draftsman, McClintic-Marshall, Pottstown, Pa.	Construction Co.
3. P. H. Mitchell.....	Municipal Power Department. Winnipeg, Man.	
2.*R. H. Montgomery, B.A.Sc., D.L.S. Hydrographic Surveys Branch.	Ottawa, Ont.	Dept. of Marine and Fisheries.
1. F. A. Moore.....	Toronto, Ont.	
3. E. E. Mullins.....	Baldwin Locomotive Works. Philadelphia, Pa.	
3. I. H. Nevitt, B.A.Sc.....	Construction Bell Telephone Co. Toronto, Ont.	
1. E. W. Oliver, B.A.Sc.....	Asst. to Chief Engineer Eastern Lines, Toronto, Ont.	Mackenzie, Mann Ry. System.
3. J. P. Oliver.....	Riter-Conley Mfg. Co. Pittsburgh, Pa.	
3. J. D. Pace, B.A.Sc.....	Canadian Westinghouse Co. Montreal, Que.	
3. B. B. Patten, B.A.Sc.....	St. George, Ont.	
2. D. H. Philp.....	Georgian Bay Canal Survey. Ottawa, Ont.	
3.*D. H. Pinkney.....	National Tube Dept., Box 261, Elyria, O.	U.S. Steel Corporation.
2. T. H. Plunkett, B.A.Sc.....	Resident Engineer, Wahnapitae, Ont.	Can. Northern Ry. Co.

*Diploma with honours.

1903.—Concluded.

Course.	Name and address.	Occupation.
1.*H. L. Seymour.....	Topographical Surveys Branch, Ottawa, Ont.	Department of the Interior.
3.*H. M. Scheibe.....	Student apprentice, Westinghouse Pittsburgh, Pa.	Electric & Mfg. Co.
1. J. H. Smith, D. & O.L.S.....	Sinclair & Smith, New Liskeard, Ont.	Engineers and Surveyors.
3. H. G. Smith, B.A.Sc.....	Demonstrator in Electrical Engineer- ing, University of Toronto.	
3. S. L. Trees, B.A.Sc.....	Supt. Mfg. Dept., Samuel Trees & Co., Toronto, Ont.	42 Wellington St. East.
2. J. E. Umbach.....	Topographical Surveys Branch, Ottawa, Ont.	Department of the Interior.
1. J. Waldron, D.L.S.....	Resident Engineer, Thorold, Ont.	Toronto & Hamilton Ry.
3.*S. B. Wass.....	Office of Jas. McDougall, Toronto, Ont.	County Engineer.
3. J. A. Whelihan.....	Edison Storage Battery Co. Glen Ridge, N.J.	
3. H. F. White.....	Erecting Dept., Can. Foundry Co. Toronto, Ont.	
2.*C. G. Williams.....	Representing Max Erfurt Sizing Sun Life Building, Montreal, Que.	Patents.
1.*N. D. Wilson, B.A.Sc.....	Staff of C.P.R. Saskatoon, Sask.	
1.*C. R. Young.....	Structural Department, Toronto, Ont.	Canada Foundry Co.

1904.

3.*J. H. Alexander, B.A.....	Hamilton Bridge Co. Hamilton, Ont.	
3.*J. H. Barrett.....	With the Wm. Davies Co., Ltd. Toronto, Ont.	
3. M. B. Bonnell.....	Westinghouse Electric and Mfg. Co., East Pittsburgh, Pa.	Apprenticeship Dept.
3. T. D. Brown, B.A.Sc.....	With Alamo Gas Engine Works. Hillsdale, Mich.	
3. F. W. Burnham, B.A.Sc.....	Construction Dept., Saskatoon, Sask.	Allis-Chalmers-Bullock Co.

*Diploma with honours.

1904—Continued.

Course.	Name and address.	Occupation.
3.	J. W. Calder.....	With Northern Electric & Mfg. Co. Montreal, Que.
1.	A. J. Campbell, B.A.Sc.....	Collingwood, Ont.
1.	N. C. Cameron.....	Dominion Engineering and Construc- Montreal, Que. tion Co.
3.*	A. M. Campbell, B.A.Sc.....	Draftsman, Pittsburgh, Pa. McClintic-Marshall Const. Co.
4.	J. B. Challies.....	Topographical Surveys Branch, Ottawa, Ont. Department of the Interior.
2.	C. A. Chilver.....	Asst. to C. C. Fairchild, D.L.S. Calgary, Alta.
2.	H. L. Chilver.....	Topographical Surveys Branch, Ottawa, Ont. Department of the Interior.
1.	U. W. Christie, B.A.Sc., O.L.S.	Chesley, Ont.
2.	P. C. Coates, B.A.Sc.....	Mining Engineer. Cobalt, Ont.
1.	S. B. Code.....	Town Engineer. Smith's Falls, Ont.
1.*	T. F. Code, B.A.Sc. (deceased).	
1.*	W. A. Cowan.....	C.P.R. Engineering Staff. Toronto, Ont.
3.*	S. E. Craig.....	With Manson Mfg. Co. Thorold, Ont.
1.*	S. R. Crerar, B.A.Sc., O.L.S...	Demonstrator in Surveying, Toronto, Ont. University of Toronto.
3.	W. M. Currie.....	Chief Inspector and Engineer, Hamilton, Ont. Hamilton Steel and Iron Co.
3.	H. H. Depew.....	Supt., Crow's Nest Pass Electric Ferne, B.C. Light and Power Co.
2.	A. J. Elder.....	Topographical Surveys Branch; Ottawa, Ont. Department of the Interior.
2.	J. G. Fleck.....	Lumber Merchant. Madawaska, Ont.
1.*	A. L. Ford, B.A.Sc.....	Toronto, Ont.
3.	W. S. Gibson, B.A.Sc.....	Asst. Supt., The Dale Co. New York, N.Y.
1.	J. P. Gordon.....	Office of Willis Chipman, C.E. Toronto, Ont.

*Diploma with honours.

1904—Continued.

Course.	Name and address.	Occupation.
3.	W. W. Gray, B.A.Sc.....	Demonstrator in Thermodynamics, Toronto, Ont. University of Toronto.
1.	A. Gray, B.A.Sc.....	Port Credit, Ont.
3.	W. K. Greenwood, B.A.Sc.....	Electrical Engineer, Toronto, Ont. 32 Adelaide St. E.
1.	L. D. Hara.....	Leveller and Draftsman, St. Catharines, Ont. Welland Canal Co.
3.	C. J. Harris, B.A.Sc.....	Brantford, Ont.
1.	J. B. Heron, B.A.Sc.....	Resident Engineer, Wahnapitae, Ont. Can. Northern Ry.
1.	E. M. M. Hill.....	Engineering Staff, Canadian Northern Guelph, Ont. Railway.
2.	S. N. Hill.....	Topographical Surveys Branch, Ottawa, Ont. Department of the Interior.
2.	C. J. Ingles.....	Office of Willis Chipman, C.E., Toronto, Ont. Consulting Engineer.
1.	E. A. James, B.A.Sc.....	Engineering Staff, Thornhill, Ont. C. P. Ry.
1.	P. V. Jermyn, B.A.Sc.....	C.P.R. Construction Dept. 118 King St. West, Toronto, Ont.
3.	W. S. H. Keefe.....	Manager and Treasurer, Fort Covington, N.Y. Light, Heat and Power Co.
3.	W. J. Larkworthy.....	Engineering Staff, Niagara Falls Niagara Falls, N.Y. Hydraulic Power and Mfg. Co.
3.	O. B. McCuaig, B.A.Sc.....	Wyse & Middlemist, Toronto, Ont. 43 Janes Building.
1.	G. G. McEwen, B.A.Sc.....	Office of Dunn. Winchester, Ont.
1.*	W. G. McFarlane, B.A., B.A.Sc	Engineer and Surveyor. Toronto, Ont.
3.*	C. P. McGibbon, B.A.....	With Westinghouse Electric and Mfg. East Pittsburgh, Pa. Co.
3.	C. McKay, B.A.Sc (deceased).	
1.	D. McMillan.....	Woodville, Ont.
3.	G. J. Manson.....	With Manson Mfg. Co., Ltd. Thorold, Ont.

*Diploma with honours.

1904—Continued.

Course.	Name and address.	Occupation.
1.*W. N. Moorhouse.....	Office of Sproatt & Rolph, Architects. Toronto, Ont.	
3. E. E. Moore.....	Engineer, Inter-State Iron Co. Glen Falls, N.Y.	
3. W. H. Munro.....	Wm. Hamilton Mfg. Co. Peterboro, Ont.	
3. G. Pace, B.A.Sc.....	Canadian Westinghouse Co. Toronto, Ont.	
3. W. S. Pardoe, B.A.Sc.....	Hydraulic Engineer, Toronto, Ont.	Can. Foundry Co.
3. J. Paris.....	Inspector, Temiskaming & Northern North Bay, Ont.	Ontario Railway.
2. J. Parke, B.A.Sc.....	Chemist and Assayer. Cobalt, Ont.	
3. W. J. Peaker.....	Draftsman, Lake Superior Power Co. Sault Ste. Marie, Ont.	
3.*A. E. Pickering.....	Draftsman, Lake Superior Power Co. Sault Ste. Marie, Ont.	
1. D. L. C. Raymond, B.A.Sc.....	Chief Engineer, Toronto, Ont.	Trussed Concrete Steel Co.
1. F. B. Reid.....	Engineering Staff of Willis Chipman, Port Elgin, Ont.	C.E.
3.*M. R. Riddell, B.A.Sc.....	Lecturer in Mechanical Engineering. Toronto, Ont.	University of Toronto.
3. G. S. Roxburgh, B.A.Sc.....	Manager, Featherstonhaugh & Co., Winnipeg, Man.	Patent Solicitors and Engineers.
2. F. N. Rutherford, B.A.Sc.....	General Manager, Concrete Pole Co. St. Catharines, Ont.	
1.*J. D. Shepley, B.A.Sc., D.L.S....	Engineer and Surveyor. Maple Creek, Sask.	
3. F. W. Slater, B.A.Sc.....	With General Electric Co. Schenectady, N.Y.	
3.*R. S. Smart.....	Manager, Featherstonhaugh & Co., Ottawa, Ont.	Patent Solicitors and Engineers.
1. D. A. Smith.....	Resident Engineer, Byng-Inlet, Ont.	Canadian Northern Ry.
3. W. J. Smither, B.A.Sc.....	Manager, Seattle Office of Abner Seattle, Wash.	Doble Co.
3. S. E. Thomson, B.A.Sc.....	Engineering Staff, Electrical Develop- Niagara Falls, Ont.	ment Co.

*Diploma with honours.

1904—*Continued.*

Course.	Name and address.	Occupation.
3. C. J. Townsend, B.A.Sc.....	Hydraulic Dept., Canada Foundry Co. Toronto, Ont.	
1. D. T. Townsend, B.A.Sc., O.L.S C.P.R.	Land Department. Winnipeg, Man.	
1. A. V. Trimble, B.A.Sc.....	With Mackenzie, Mann & Co. Toronto, Ont.	
3. B. B. Tucker, B.A.Sc.....	Resident Engineer of The Canada Tin Morrisburg, Ont.	Plate and Sheet Co., Ltd.
2.*E. Wade, B.A.....	Demonstrator in Mining, Toronto, Ont.	University of Toronto.
1.*E. W. Walker, B.A.Sc.....	Dept. of Public Works. Regina, Sask.	
3. J. P. Watson, B.A.Sc.....	Draftsman, Motive Power Dept., Montreal, Que.	C. P. Ry.
1. J. M. Weir.....	Engineering Staff, G.T. Ry. Hamilton, Ont.	
1.*A. F. Wells, O.L.S., B.A.Sc....	Engineering Dept., Toronto, Ont.	Trussed Concrete Steel Co.
1. W. R. Worthington, B.A.Sc....	Asst. Sewer Engineer. Toronto, Ont.	Staff of City Engineer.
3. W. F. Wright.....	General Electric Co. Schenectady, N.Y.	

1905.

2. H. W. Arens.....	Assistant Engineer. Norwood Grove, Man.	
3. R. H. Armour.....	Westinghouse Electric & Mfg. Co. Pittsburgh, Pa.	
3.*C. B. Aylesworth.....		
	Toronto, Ont.	
1.*W. Barber, B.A.Sc.....	Demonstrator in Strength of Ma- Toronto, Ont.	terials, University of Toronto.
2.*W. A. Begg, B.A.Sc.....	Mining Engineer, New Ontario Ex- 148 Stanley Ave.,	ploration Co., Ltd.
	Hamilton, Ont.	
3.*G. G. Bell.....	Draftsman, Canada Foundry Co. Toronto, Ont.	
1. J. C. Boeckh.....		
	Toronto, Ont.	

*Diploma with honours.

1905—Continued.

Course.	Name and address.	Occupation.
3.	W. M. Bristol.....	Canadian Westinghouse Co. Montreal, Que.
2.	W. C. Campbell.....	Keene, Ont.
3	W. R. Carson.....	Engineering Dept., 111 Broadway, New York, N.Y. Hudson Companies.
1.	A. V. Chase.....	
3.	S. R. A. Clement.....	With General Electric Co. Schenectady, N.Y.
3.	T. E. Corrigan.....	Chicago Edison Co. 88 Market St., Chicago.
1.*N.	L. R. Crosby, B.A.Sc.....	Estimating Dept., Pittsburgh, Pa. McClintic-Marshall Const. Co.
1.	G. H. Ferguson, B.A.Sc.....	Fellow in Surveying, Toronto, Ont. University of Toronto.
3.	H. S. Fierheller, B.A.Sc.....	Demonstrator in Electricity, Toronto, Ont. University of Toronto.
3.	F. W. Harrison.....	Draftsman, Brooklyn Edison Co. Brooklyn, N.Y.
1.	M. C. Hendry.....	Engineering Staff, North Bay, Ont. T. & N. O. Ry.
2.	C. S. L. Hertzberg.....	Transitman, Montreal, Que. C.P.R. Engineering Staff.
3.	W. G. Hewson.....	Westinghouse Electric & Mfg. Co. Pittsburgh, Pa.
1.	G. S. Jones.....	Smith's Falls, Ont.
3.*G.	Kribs.....	16 St. Matthew's Ave. Hamilton, Ont.
1.	A. Latornell, B.A.Sc.....	Sewer Dept., Toronto, Ont. City Hall.
3.	J. W. Leighton.....	With Allis-Chalmers-Bullock, Ltd. Montreal, Que.
1.*T.	R. Loudon, B.A.Sc.....	Demonstrator in Drawing, Toronto, Ont. University of Toronto.
3.	S. E. McGorman.....	Draftsman, Walkerville, Ont. Canadian Bridge Co.
1.*W.	W. McGregor (deceased).	

*Diploma with honours.

1905—*Continued.*

Course.	Name and address.	Occupation.
2. D. W. McKenzie.....	Draftsman, Engineering Dept., Winnipeg, Man.	C. N. Ry.
3.*C. A. McLean.....	Canadian Westinghouse Co. Toronto, Ont.	
3. R. W. Moffatt, B.A.Sc.....	Canadian Westinghouse Co. Hamilton, Ont.	
3. L. W. Morden.....	Canadian Westinghouse Co. Montreal, Que.	
3. G. R. Munro, B.A.Sc.....	Wm. Hamilton Mfg. Co. Peterboro, Ont.	
3.*W. G. Nicklin.....	Post-Graduate Course, Toronto, Ont.	Faculty of Applied Science,
1.*B. B. Patten, B.A.Sc.....	St. George, Ont.	
1. E. P. A. Phillips, B.A.Sc.....	Cedar Dale, Ont.	
1. Porte, W. B.....	Post-Graduate Course, Toronto, Ont.	Faculty of Applied Science,
2. E. F. Pullen.....	Draftsman, Transcontinental R.R. Oakville, Ont.	Survey.
2. G. L. Ramsey, B.A.Sc.....	Toronto, Ont.	
3.*R. B. Ross.....	Toronto, Ont.	
5. T. E. Rothwell.....	Fellow in Chemistry, Toronto, Ont.	Faculty of Applied Science,
2.*G. S. Scott.....	With Geological Survey of Canada. Broadway and 108th Sts., New York, N.Y.	
3. H. V. Serson.....	Engineering Dept., Hudson Com- 111 Broadway, New York. panies.	
3. C. H. Shirriff, B.A.Sc.....	Occasional Student, Toronto, Ont.	Faculty of Applied Science.
3.*C. E. Sisson.....	Engineering Dept., Can. Gen. Elec. Co. Peterboro, Ont.	
1. D. L. N. Stewart.....	Collingwood, Ont.	
1. M. A. Stewart.....	Roadway Dept., City Hall. Toronto, Ont.	

*Diploma with honours.

1905—Continued.

Course.	Name and address.	Occupation.
3.*W. F. Stubbs.....	Draftsman, Goldie & McCulloch. Galt, Ont.	
1. N. H. Sturdy.....	Designer, L. S. & M. S. Ry. Cleveland, O.	
1. W. G. Swan, B.A.Sc.....	Canadian Northern Ry. Montreal, Que.	
1.*F. H. Sykes.....	Draftsman, National Transconti- Nipigon, Ont. nental Ry.	
3. L. R. Thomson, B.A.Sc.....	Student, Toronto, Ont.	Faculty of Applied Science,
3. E. D. Tillson.....	Asst. Engineer, 715 1st National Bank Bldg., New York, N.Y.	G. M. Gest, Contractor.
1.*J. J. Traill, B.A.Sc.....	Demonstrator in Hydraulics, Toronto, Ont.	Faculty of Applied Science,
1.*W. M. Treadgold, B.A.....	Lecturer in Surveying, Toronto, Ont.	Faculty of Applied Science,
3. W. E. Turner, B.A.Sc.....	Leadville Light and Power Co. Leadville, Col.	
3. J. M. Vaughan.....	Toronto-Niagara Power Co. Niagara Falls, Ont.	
1. H. L. Wagner, B.A.Sc.....	Toronto, Ont.	
2. W. H. Young.....	Post-Graduate Course, Toronto, Ont.	Faculty of Applied Science,

1906.

3.*W. L. Amos.....	Engineering Apprentice, Hamilton, Ont.	Can. Westinghouse Co.
3.*J. C. Armer.....	Post-Graduate Course, Toronto, Ont.	Faculty of Applied Science.
1. M. H. Baker.....	Post-Graduate Course, Toronto, Ont.	Faculty of Applied Science,
3. F. W. Baldwin.....		
2. E. W. Banting.....	Post-Graduate Course, Toronto, Ont.	Faculty of Applied Science,
3. F. Barber.....	Fellow in Electricity, Toronto, Ont.	Faculty of Applied Science.

*Diploma with honours.

1906—Continued.

Course.	Name and address.	Occupation.
2. M. Bates.....	Post-Graduate Course, Toronto, Ont.	Faculty of Applied Science,
2. J. P. Bellisle (deceased).		
3.*H. H. Betts.....	Post-Graduate Course, Toronto, Ont.	Faculty of Applied Science,
5.*D. E. Beynon.....	Post-Graduate Course, Toronto, Ont.	Faculty of Applied Science,
2. G. W. Bissett.....	With Canada Iron Furnace Co. Midland, Ont.	
3. W. C. Blackwood.....	Fellow in Physics, Toronto, Ont.	Faculty of Applied Science,
3. H. E. Brandon.....	Post-Graduate Course, Toronto, Ont.	Faculty of Applied Science,
1. M. E. Brian.....	Post-Graduate Course, Toronto, Ont.	Faculty of Applied Science,
2. T. W. Brown.....	Fellow in Surveying, Toronto, Ont.	Faculty of Applied Science,
1.*A. E. K. Bunnell.....	Post-Graduate Course, Toronto, Ont.	Faculty of Applied Science,
3. F. M. Byam.....	Engineering Dept., Toronto, Ont.	Canada Foundry Co.
3. A. Cameron.....	Draftsman, Lackawanna Steel Co. Buffalo, N.Y.	
3. A. W. Campbell.....		
1. M. J. Carroll.....	Topographical Surveys Branch, Ottawa, Ont.	Department of the Interior.
3.*R. E. C. Chadwick.....	Engineering Dept., Toronto, Ont.	Canada Foundry Co.
1.*G. T. Clark, B.A.....	With John Galt, C.E. & M.E. Indian Head, Sask.	
3.*G. A. Colhoun.....	With The Hamilton Bridge Works., Hamilton, Ont.	Co., Ltd.
1.*W. A. M. Cook.....	Post-Graduate Course, Toronto, Ont.	Faculty of Applied Science,
1.*E. L. Cousins.....	Post-Graduate Course, Toronto, Ont.	Faculty of Applied Science,
4. A. G. Creighton.....	Fellow in Drawing, Toronto, Ont.	Faculty of Applied Science,
4. W. N. Daniels.....	Post-Graduate Course, Toronto, Ont.	Faculty of Applied Science,

*Diploma with honours.

1906—Continued.

Course.	Name and address.	Occupation.
3.*N. P. F. Death.....	Toronto, Ont.	Post-Graduate Course, Faculty of Applied Science,
3. C. S. Dundass.....	Toronto, Ont.	Post-Graduate Course, Faculty of Applied Science,
3. S. L. Fear.....	Toronto, Ont.	Fellow in Drawing, Faculty of Applied Science,
5.*C. C. Forward.....	Toronto, Ont.	Fellow in Chemistry, Faculty of Applied Science,
5. C. W. Graham.....	Bradford, Ont.	Analytical Chemist.
1.*P. W. Greene.....	Toronto, Ont.	Engineering Staff, Jas. McDougall, C.E., County Engineer.
3. C. B. Hamilton.....	Toronto, Ont.	Post-Graduate Course, Faculty of Applied Science,
1.*A. L. Harkness.....	Lachine, Que.	Draftsman, Dominion Bridge Co.
1.*R. L. Harrison.....	Cap Sante, P.Q.	Resident Engineer, Canadian Northern Ry.
1. E. Harrison.....	Maynooth, Ont.	Assistant Engineer, Central Ontario Ry.
3. J. C. Hartney.....	Toronto, Ont.	Post-Graduate Course, Faculty of Applied Science,
1. S. Hett.....	Toronto, Ont.	Post-Graduate Course, Faculty of Applied Science,
3. C. W. Hookway.....	Montreal, Que.	Canadian Westinghouse Co.
3. R. H. Hopkins.....	Toronto, Ont.	Post-Graduate Course, Faculty of Applied Science,
1.*R. S. Houston.....		
2.*W. Huber.....	Toronto, Ont.	Fellow in Drawing, Faculty of Applied Science,
3.*A. H. Hull.....	Hamilton, Ont.	Engineering Apprenticeship Course, Canadian Westinghouse Co.
3. W. C. Jepson.....	Edmonton, Alta.	Staff of City Engineer.
1.*C. Johnston.....	Toronto, Ont.	Post-Graduate Course, Faculty of Applied Science,
1. G. R. Jones.....	Toronto, Ont.	Post-Graduate Course, Faculty of Applied Science,

*Diploma with honours.

1906.—*Concluded.*

Course.	Name and address.	Occupation.
3. T. Jones.....	Post-Graduate Course, Toronto, Ont.	Faculty of Applied Science,
1.*A. E. Jupp.....	Post-Graduate Course, Toronto, Ont.	Faculty of Applied Science,
3. J. D. Keppy.....	Fellow in Drawing, Toronto, Ont.	Faculty of Applied Science,
1. J. L. Lang.....	Post-Graduate Course, Toronto, Ont.	Faculty of Applied Science,
3. A. P. Linton.....	Draftsman, Hamilton Bridge Works Hamilton, Ont.	Co.
4.*A. W. McConnell.....	Post-Graduate Course, Toronto, Ont.	Faculty of Applied Science,
3.*D. G. McIlwraith.....	Draftsman, Sheldons, Limited. Galt, Ont.	
2. J. A. McKenzie.....	Resident Engineer, Box 535, Winnipeg, Man.	C.P.R. Construction Dept.
1.*J. V. McNab.....	Transitman, Kenora, Ont.	C.P.R. Engineering Staff.
3. J. A. McPherson.....	Post-Graduate Course, Toronto, Ont.	Faculty of Applied Science,
2. K. A. MacKenzie.....	Post-Graduate Course, Toronto, Ont.	Faculty of Applied Science,
1.*W. MacKinnon.....	Fellow in Drawing, Toronto, Ont.	Faculty of Applied Science,
3.*W. MacLachlan.....	Post-Graduate Course, Toronto, Ont.	Faculty of Applied Science,
3.*D. W. Marrs.....	With The Hamilton Bridge Works Hamilton, Ont.	Co., Ltd.
3. W. A. Maxwell.....	Draftsman, Canadian Bridge Co. Walkerville, Ont.	
1.*J. M. Menzies.....	Post-Graduate Course, Toronto, Ont.	Faculty of Applied Science,
3. L. R. Miller.....	With Westinghouse Electric and Mfg. East Pittsburgh, Ont.	Co.
1.*B. F. Mitchell.....	Post-Graduate Course, Toronto, Ont.	Faculty of Applied Science,
1. F. F. Montague.....	Post-Graduate Course, Toronto, Ont.	Faculty of Applied Science,
1.*W. J. Moore.....		
2. C. J. Murphy.....	Chemist and Metallurgist, Copper Cliff, Ont.	Canada Copper Co.

*Diploma with honours.

1906.—*Concluded.*

Course.	Name and address.	Occupation.
1.*W. P. Near, B.A.....	Toronto, Ont.	Post-Graduate Course, Faculty of Applied Science,
3. D. G. Park.....	Toronto, Ont.	Post-Graduate Course, Faculty of Applied Science,
3. G. W. Paterson.....	Toronto, Ont.	Fellow in Electricity, Faculty of Applied Science,
5. R. E. Pettingill.....	Belleville, Ont.	Assistant Chemist, Belleville Portland Cement Co.
2.*R. C. Purser.....	Toronto, Ont.	Post-Graduate Course, Faculty of Applied Science,
3. N. R. Robertson.....	Toronto, Ont.	Post-Graduate Course, Faculty of Applied Science,
1. C. H. Rogers.....	Toronto, Ont.	Post-Graduate Course, Faculty of Applied Science,
2.*O. Rolfson.....	Toronto, Ont.*	Post-Graduate Course, Faculty of Applied Science,
1. R. C. Ross.....	Toronto, Ont.	Post-Graduate Course, Faculty of Applied Science,
1. K. G. Ross.....	Toronto, Ont.	Post-Graduate Course, Faculty of Applied Science,
1.*H. T. Routly.....	Haileybury, Ont.	Engineer and Surveyor.
2. J. H. Ryckman.....	Toronto, Ont.	With Canadian Foundry Co.
3.*W. K. Sanders.....	15 Dey St., New York, N.Y.	Engineer, New York Telephone Co.
1.*W. A. Scott.....	Galt, Ont.	With Transcontinental Ry.
1.*W. M. Stewart.....	142 Aberdeen Ave., Hamilton, Ont.	
2. J. E. Thomson.....	Toronto, Ont.	Post-Graduate Course, Faculty of Applied Science,
3.*C. L. Vickery.....	Empire Building, New York, N.Y.	Erecting Engineer, Allis-Chalmers Co.
3.*J. N. Wilson.....	Pittsfield, Mass.	With Stanley-G.I. Electric Mfg. Co.
3.*E. M. Wood.....	Pittsfield, Mass.	With Stanley-G.I. Electric Mfg. Co.

*Diploma with honours.

CERTIFICATES.

MINERALOGY AND ASSAYING.

Date. Name and Address.

1896. G. Johnston.....

1896. A. T. Tye..... e/o Empresa Hanséatica, Barran-
quilla, Columbia, S. America.

1897. E. B. Webster.....

1898. A. N. McMillan..... Penetanguishene, Ont.

1900. A. H. Smith..... Supt., Los Reyes Gold Mining and
Milling Co., Oaxaca, Mexico.

1901. G. A. Hunt.....

ELECTRICITY.

1896. E. I. Sifton..... Manager, London Electric Construc-
tion Co., London, Ont.

1903. W. Elwell..... Top. Surveys Branch, Dept. of the
Interior, Ottawa, Ont.

*Diploma with honours.

INDEX TO GRADUATES.

In the following alphabetical list of the Graduates is given the year of graduation of each student. In the preceding list, which is arranged by classes in the order of graduation, may be found additional information as to occupation, addresses, etc.

A.

Acres, H. G.....	1903	Angus, H. H.....	1903
Alexander, J. H.....	1904	Apsey, J. F.....	1888
Alison, T. H.....	1892	Ardagh, J. A.....	1893
Alison, J. G. R.....	1903	Ardagh, E. G. R.....	1900
Allan, J. R.....	1892	Arens, H. W.....	1905
Allan, J. L.....	1900	Armer, J. C.....	1906
Amos, W. L.....	1906	Armour, R. H.....	1905
Anderson, A. G.....	1892	Armstrong, J.....	1895
Andrews, E.....	1897	Ashbridge, W. T.....	1888
Angus, R. W.....	1894	Aylsworth, C. B.....	1905

B.

Baldwin, F. W.....	1906	Begg, W. A.....	1905
Bain, J. A.....	1900	Bell, G. G.....	1905
Bain, J. W.....	1896	Bellisile, J. P. (deceased)...	1906
Baker, M. H.....	1906	Bergey, A. E.....	1894
Ball, E. F.....	1888	Bertram, G. M.....	1901
Ballantyne, H. F.....	1893	Betts, H. H.....	1906
Banting, E. W.....	1906	Beynon, D. E.....	1906
Barber, H. G.....	1902	Bissett, G. W.....	1906
Barber, T.....	1899	Blackwood, A. E.....	1895
Barber, W.....	1905	Blackwood, W. C.....	1906
Barber, F.....	1906	Blair, W. J.....	1902
Barker, H. P.....	1893	Bleakley, J. F.....	1885
Barley, J. H.....	1900	Boeckh, J. C.....	1906
Barrett, R. H.....	1901	Bonnell, M. B.....	1904
Barrett, J. H.....	1904	Boswell, E. J.....	1895
Bates, M.....	1906	Boswell, M. C.....	1900
Beatty, H. J.....	1890	Boustead, W. E. (deceased)...	1890
Beatty, W. G.....	1901	Bow, J. A.....	1897
Beatty, J. A.....	1903	Bowers, W. J. (deceased)...	1901
Beauregard, A. T.....	1894	Bowman, H. J.....	1885

Bowman, F. M.....	1890	Brown, D. B.....	1888
Bowman, A. M.....	1886	Brown, G. L.....	1893
Boyd, D. G.....	1894	Brown, L. L.....	1895
Boyd, W. H.....	1898	Brown, T. D.....	1904
Brandon, E. T. J.....	1901	Bucke, M. A. (deceased)....	1890
Brandon, H. E.....	1906	Bucke, W. A.....	1894
Bray, L. T.....	1900	Bunnell, A. E. K.....	1906
Brebner, G. (deceased)....	1895	Burd, J. H.....	1903
Brereton, W. P.....	1901	Burgess, E. L.....	1903
Breslove, J.....	1903	Burns, D.....	1883
Brian, M. E.....	1906	Burns, J. C. (deceased)....	1887
Bristol, W. M.....	1905	Burnham, F. W.....	1904
Brodie, W. M.....	1895	Burnside, J. T. M.....	1899
Broughton, J. T.....	1901	Burwash, L. T.....	1896
Brown, J. M.....	1902	Burwash, N. A.....	1903
Brown, T. W.....	1906	Byam, F. M.....	1906

C.

Calder, J. W.....	1904	Chase, A. V.....	1906
Cameron, N. C.....	1904	Chewett, H. J.....	1888
Cameron, A.....	1906	Chilver, C. A.....	1904
Campbell, A. J.....	1904	Chilver, H. L.....	1904
Campbell, A. M.....	1904	Christie, W.....	1902
Campbell, W. G.....	1902	Christie, U. W.....	1904
Campbell, A. R.....	1902	Christie, A. G.....	1901
Campbell, R. J.....	1895	Chubbuck, L. B.....	1899
Campbell, G. M.....	1896	Clark, J.....	1900
Campbell, W. C.....	1905	Clark, G. T.....	1906
Campbell, A. W.....	1906	Clark, F. F.....	1903
Canniff, C. M.....	1888	Clement, W. A.....	1889
Carey, B.....	1899	Clement, S. R. A.....	1905
Carmichael, C. G.....	1902	Clothier, G. A.....	1899
Carpenter, H. S.....	1897	Coates, P. C.....	1904
Carson, W. R.....	1905	Cockburn, J. R.....	1901
Carter, W. E. H.....	1898	Code, S. B.....	1904
Carroll, M. J.....	1906	Code, T. F. (deceased)....	1904
Chace, W. G.....	1901	Colhoun, G. A.....	1906
Chadwick, R. L. C.....	1906	Conlon, F. T.....	1902
Challies, J. B.....	1904	Connor, H. V.....	1902
Chalmers, W. J.....	1889	Connor, A. W.....	1895
Chalmers, J.....	1894	Cook, W. A. Mc.....	1906
Charlesworth, L. C.....	1893	Cooper, C.....	1899
Charlton, H. W.....	1897	Corrigan, G. D. (deceased)..	1890

Corrigan, T. E.....	1905	Creighton, A. G.....	1906
Coulson, C. L.....	1903	Crerar, S. R.....	1904
Cousins, E. L.....	1906	Crosby, N. L. R.....	1905
Coulthard, R. W.....	1899	Culbert, M. T.....	1902
Cowan, W. A.....	1904	Cumming, R.....	1902
Craig, J. A.....	1899	Currie, W. M.....	1904
Craig, S. E.....	1904		

D.

Daniels, W. N.....	1906	Dill, C. W.....	1891
Darling, E. H.....	1898	Dixon, H. A.....	1900
Davison, J. E.....	1900	Dobie, J. S.....	1895
Davison, A. E.....	1903	Douglas, W. E.....	1902
Deacon, T. R.....	1891	Duff, J. A. (deceased).....	1890
Death, N. P. F.....	1906	Duff, W. A.....	1901
DeCew, J. A.....	1896	Duggan, G. H.....	1883
Depew, H. H.....	1904	Dundass, C. S.....	1906
Dickson, G. W.....	1900	Dunlop, R. J.....	1902
Dickinson, E. D.....	1900	Dunn, T. H.....	1893

E.

Eason, D. E.....	1901	Elwell, W.....	1902
Edwards, W. M.....	1902	Empey, J. M.....	1902
Elliott, H. P.....	1896	English, A. B. (deceased)...	1890
Elliot, J. C.....	1899	Ewart, J. A.....	1894
Elder, A. J.....	1904		

F.

Fairbairn, J. M. R.....	1893	Ford, A. L.....	1904
Fairchild, C.....	1892	Forester, C.....	1893
Fear, S. L.....	1906	Forman, W. E.....	1899
Fensom, C. J.....	1903	Forward, E. A.....	1897
Ferguson, G. H.....	1905	Forward, C. C.....	1906
Fierheller, H. S.....	1905	Francis, W. J.....	1893
Fingland, W.....	1893	Fuce, E. O.....	1903
Fleck, J. G.....	1904	Fullerton, C. H.....	1900
Forbes, D. L. H.....	1902		

G.

Gaby, F. A.....	1903	Gordon, J. P.....	1904
Gagne, S.....	1901	Gourlay, W. A.....	1903
Gardner, J. C.....	1903	Graham, C. W.....	1906
Garland, N. L.....	1890	Grant, W. F.....	1898
George, R. E.....	1903	Gray, A. T.....	1897
Gibbons, J.....	1888	Gray, W. W.....	1904
Gibson, A. E.....	1902	Gray, A.....	1904
Gibson, N. R.....	1901	Greene, P. W.....	1906
Gibson, W. S.....	1904	Greenwood, W. K.....	1904
Gillespie, P.....	1903	Guernsey, F. W.....	1895
Goldie, A. R.....	1893	Gurney, W. C.....	1896
Goodwin, A. C.....	1902	Guest, W. S.....	1900
Goodwin, J. B.....	1892	Guy, E.....	1899

H.

Haight, H. V.....	1896	Henderson, S. E. M.....	1900
Hamer, A. T. E.....	1901	Hendry, M. C.....	1905
Hamilton, J. F.....	1903	Henry, J. A.....	1900
Hamilton, C. B.....	1906	Henwood, C.....	1902
Hanly, S. C.....	1893	Herald, W. J.....	1894
Hanes, G. S.....	1903	Hermon, E. B.....	1886
Hanning, G. F.....	1889	Heron, J. B.....	1904
Hara, L. D.....	1904	Hertzberg, C. S. L.....	1905
Harcourt, F. Y., B.A.....	1903	Hett, S.....	1906
Hare, W. A.....	1899	Hewson, W. G.....	1905
Harkness, A. H.....	1895	Hicks, W. A. B.....	1897
Harkness, A. L.....	1906	Hill, E. M. M.....	1904
Harris, C. J.....	1904	Hill, S. N.....	1904
Harrison, R. L.....	1906	Holcroft, H. S.....	1900
Harrison, F. W.....	1905	Hookway, C. W.....	1906
Harrison, E.....	1906	Hopkins, R. H.....	1906
Hartney, J. C.....	1906	Horton, J. A.....	1903
Harvey, C.....	1901	Houston, R. S.....	1906
Haultain, H. E. T.....	1889	Huber, W.....	1906
Hayes, L. J.....	1903	Hull, H. S.....	1895
Hemphill, W.....	1900	Hull, A. H.....	1906
Henderson, E. E.....	1885	Hutcheon, J.....	1890
Henderson, F. D.....	1903		

I.

Ingles, C. J.....	1904	Irvine, J.....	1889
Innis, W. L.....	1890		

J.

Jackson, J. G.....	1903	Johnston, A. C.....	1894
Jackson, F. C.....	1901	Johnston, S. M.....	1894
James, O. S.....	1891	Johnston, H. A.....	1900
James, D. D.....	1889	Johnston, J. C.....	1900
James, E. A.....	1904	Johnston, J. A.....	1900
Jepson, W. C.....	1906	Johnston, C. K.....	1903
Jeffrey, D.....	1882	Johnston, C.....	1906
Jermyn, P. V.....	1904	Jones, J. E.....	1894
Job, H. E.....	1894	Jones, G. S.....	1905
Johnston, D. M.....	1902	Jones, G. R.....	1906
Johnston, H.....	1903	Jupp, A. E.....	1906

K.

Keefe, W. S. H.....	1904	Kirkland, W. C.....	1884
Keele, J.....	1893	Korman, T. S.....	1898
Kennedy, J. H.....	1882	Knight, R. H.....	1902
Keppy, J. D.....	1906	Kribs, G.....	1905
King, C. F.....	1897		

L.

Laidlaw, J. T.....	1893	Latham, R.....	1899
Laidlaw, A.....	1901	Latornell, A. J.....	1903
Laing, W. F. (deceased)...	1896	Latornell, A.....	1905
Laing, A. T.....	1892	Lavrock, J. E.....	1898
Laird, R.....	1886	Lawson, W.....	1892
Lane, A. (deceased).....	1891	Lawrie, R. R. (deceased)...	1896
Lang, A. G.....	1903	Lea, W. A. (deceased).....	1892
Lang, J. L.....	1906	Leighton, J. W.....	1905
Langmuir, F. L.....	1902	Linton, A. P.....	1906
Langley, C. E.....	1892	Lott, A. E.....	1887
Larkworthy, W. J.....	1904	Loudon, T. R.....	1905
Laschinger, E. J.....	1892	Ludgate, B. A.....	1885
Lash, F. L.....	1893	Lumbers, W. C.....	1901
Lash, N. M.....	1894		

Mac.

MacBeth, C.....	1896	MacKenzie, K. A.....	1906
MacKay, J. T.....	1902	Mackintosh, D.....	1898
MacMillan, C.....	1901	Mackinnon, W.....	1906
Macallum, A. F.....	1893	MacIachlan, W.....	1906
Macdougall, A. C.....	1901		

Mc.

McAllister, J. E.....	1891	McIlwraith, D. G.....	1906
McAllister, A. L.....	1893	McKay, O.....	1885
McAree, J. (deceased).....	1882	McKay, W. N.....	1895
McArthur, R. E.....	1900	McKay, C. (deceased).....	1904
McAuslan, H. J.....	1903	McKenzie, D. W.....	1905
McBride, A. H.....	1902	McKenzie, J. A.....	1906
McConnell, A. W.....	1906	McKinnon, H. L.....	1895
McCuaig, O. B.....	1904	McLean, C. A.....	1905
McCulloch, A. L.....	1887	McLennan, A. L.....	1902
McDougall, J.....	1884	McMaster, A. T. C.....	1901
McDowall, R.....	1888	McMillan, J. G.....	1900
McEntee, B.....	1892	McMillan, D.....	1904
McEwen, G. G.....	1904	McMurchy, J. A.....	1896
McFarlane, J. A.....	1903	McNab, J. V.....	1906
McFarlane, W. G.....	1904	McNaughton, A. L.....	1903
McFarlen, G. W.....	1888	McNaughton, F. W.....	1898
McFarlen, T. J.....	1893	McPherson, A. J.....	1893
McGibbon, C. P.....	1904	McPherson, J. A.....	1906
McGorman, S. E.....	1906	McTaggart, A. L.....	1894
McGowan, J.....	1895	McVean, H. G.....	1901
McGregor, W. W. (deceased). 1905			

M.

Madden, J. F. S.....	1902	Minty, W.....	1894
Main, W. T.....	1893	Mill, F. X. (deceased).....	1889
Manson, G. J.....	1904	Miller, L. Haun.....	1800
Marani, C. J.....	1888	Miller, M. L.....	1903
Marani, V. G.....	1893	Miller, L. R.....	1906
Marriot, F. G.....	1903	Milne, C. G.....	1892
Marrs, C. H.....	1902	Mines, W.....	1893
Marrs, D. W.....	1906	Mitchell, P. H.....	1903
Martin, F.....	1887	Mitchell, C. H.....	1892
Martin, T.....	1896	Mitchell, B. F.....	1906
Matheson, W. C.....	1901	Moberley, H. K.....	1889
Mathison, P.....	1902	Moffatt, R. W.....	1905
Maus, C. A.....	1903	Monds, W.....	1899
Maxwell, W. A.....	1906	Montague, F. F.....	1906
Merrill, E. B.....	1890	Montgomery, R. H.....	1903
Menzies, J. M.....	1906	Moore, H. H.....	1902
Mennie, R. S.....	1902	Moore, E. E.....	1904
Meadows, W. W.....	1895	Moore, J. H.....	1888
Middleton, H. T.....	1901	Moore, J. E. A.....	1891
Mickle, G. R.....	1888	Moore, F. A.....	1903

M.

Moore, W. J.....	1906	Mullins, E. E.....	1903
Moorhouse, W. N.....	1904	Munro, W. H.....	1904
Morden, L. W.....	1905	Munro, G. R.....	1905
Morris, J. L.....	1881	Murphy, C. J.....	1906

N.

Nash, T. S.....	1902	Nevitt, I. H.....	1903
Near, W. P.....	1906	Nicholson, C. J.....	1894
Neelands, E. V.....	1900	Nicklin, W. G.....	1905
Newman, W.....	1891		

O.

Oliver, E. W.....	1903	Oliver, J. P.....	1903
-------------------	------	-------------------	------

P.

Pace, J. D.....	1903	Pickering, A. E.....	1904
Pace, G.....	1904	Pinhey, C. H.....	1887
Pardoe, W. S.....	1904	Pinkney, D. H.....	1903
Paris, J.....	1904	Playfair, N. L.....	1892
Park, D. G.....	1906	Phillips, E. P. A.....	1905
Parke, J.....	1904	Plunkett, T. H.....	1903
Parsons, J. L. R.....	1901	Pope, A. S. H.....	1899
Paterson, G. W.....	1906	Porte, W. B.....	1906
Patten, B. B.....	1903	Powell, G. G.....	1902
Patten, B. B.....	1905	Power, G. H.....	1901
Patterson, J.....	1899	Prentice, J. M. (deceased) ..	1892
Peaker, W. J.....	1904	Price, H. W.....	1901
Pedder, J. R. (deceased)	1890	Proudfoot, H. W. (deceased) .	1897
Pettingill, R. E.....	1906	Pullen, E. F.....	1905
Philp, D. H.....	1903	Purser, R. C.....	1906
Philips, E. H.....	1900		

R.

Ramsey, G. L.....	1905	Riddell, M. R.....	1904
Ratz, W. F.....	1902	Roaf, J. R.....	1900
Raymer, A. R.....	1884	Robertson, H. D.....	1902
Raymond, D. C.....	1904	Robertson, J.....	1884
Reid, F. B.....	1904	Robertson, J. M.....	1893
Revell, G. E.....	1899	Robertson, N. R.....	1906
Richards, E.....	1899	Robinson, J. (deceased)	1891
Richardson, G. H.....	1888	Robinson, F. J.....	1895

Robinson, A. H. A.....	1897	Ross, R. B.....	1905
Rogers, J.	1887	Ross, R. C.....	1906
Rogers, C. H.....	1906	Rothwell, T. E.....	1905
Rolph, H.....	1894	Roxburgh, G. S.....	1904
Rolfson, O.....	1906	Rounthwaite, C. H. E.....	1900
Rose, K.....	1888	Routly, H. T.....	1906
Rosebrugh, T. R.....	1889	Russel, W. B.....	1891
Ross, J. E.....	1888	Russel, R.....	1893
Ross, R. A.....	1890	Rust, H. P.....	1901
Ross, J. A.....	1892	Rutherford, F. N.....	1904
Ross, K. G.....	1906	Ryckman, J. H.....	1906

S.

Sanders, W. K.....	1906	Smith, A.....	1894
Sauer, M. V.....	1901	Smith, H. G.....	1903
Saunders, G. A.....	1899	Smith, R. W.....	1898
Saunders, H. W.....	1900	Smith, J. H.....	1903
Scheibe, R. R.....	1896	Smith, D. A.....	1904
Scheibe, H. M.....	1903	Smithers, W. J.....	1904
Scott, W. F.....	1897	Speller, F. N.....	1893
Scott, G. S.....	1905	Spotton, A. K.....	1894
Scott, W. A.....	1906	Squire, R. H.....	1893
Serson, H. V.....	1905	Steel, I. J.....	1902
Seymour, H. L.....	1903	Stern, E. W.....	1884
Shanks, T.....	1899	Stevenson, W. H.....	1901
Shaw, J. H.....	1898	Stewart, J. A.....	1898
Sheply, J. D.....	1904	Stewart, D. L. N.....	1905
Shields, J. D.....	1894	Stewart, M. A.....	1905
Shipley, A. E.....	1898	Stewart, W. M.....	1906
Shirriff, C. H.....	1905	Stocking, F. T.....	1895
Silvester, G. E.....	1891	Stubbs, W. F.....	1905
Sinclair, D.....	1902	Stull, W. W.....	1897
Sisson, C. E.....	1905	Sturdy, N. H.....	1905
Slater, F. W.....	1904	Sutherland, W. H.....	1902
Smallpiece, F. C.....	1898	Swan, W. G.....	1905
Smart, R. S.....	1904	Sykes, F. H.....	1905
Smiley, R. W.....	1897	Symmes, H. D.....	1891
Smith, A. N.....	1892		

T.

Taylor, T.....	1902	Teasdale, C. M.....	1902
Taylor, W. V.....	1893	Tennant, D. C.....	1899
Taylor, A.....	1900	Tennant, W. C.....	1900

Thomson, T. K.....	1886	Traill, J. J.....	1905
Thomson, R. W.....	1892	Treadgold, W. M.....	1905
Thomson, S. E.....	1904	Trees, S. L.....	1903
Thomson, L. R.....	1905	Tremaine, R. C. C. (dec'd.)	1895
Thomson, J. E.....	1906	Trimble, A. V.....	1904
Thorne, S. M.....	1900	Tucker, B. B.....	1904
Thorold, F. W.....	1900	Turner, W. E.....	1905
Tillson, E. D.....	1905	Tyrrell, J. W.....	1883
Townsend, C. J.....	1904	Tyrrell, H. G.....	1886
Townsend, D. T.....	1904		

U.

Umbach, J. E.....	1906
-------------------	------

V.

VanEvery, W. W.....	1899	Vernoe, H. L.....	1898
Vaughan, J. M.....	1905	Vickery, C. L.....	1906

W.

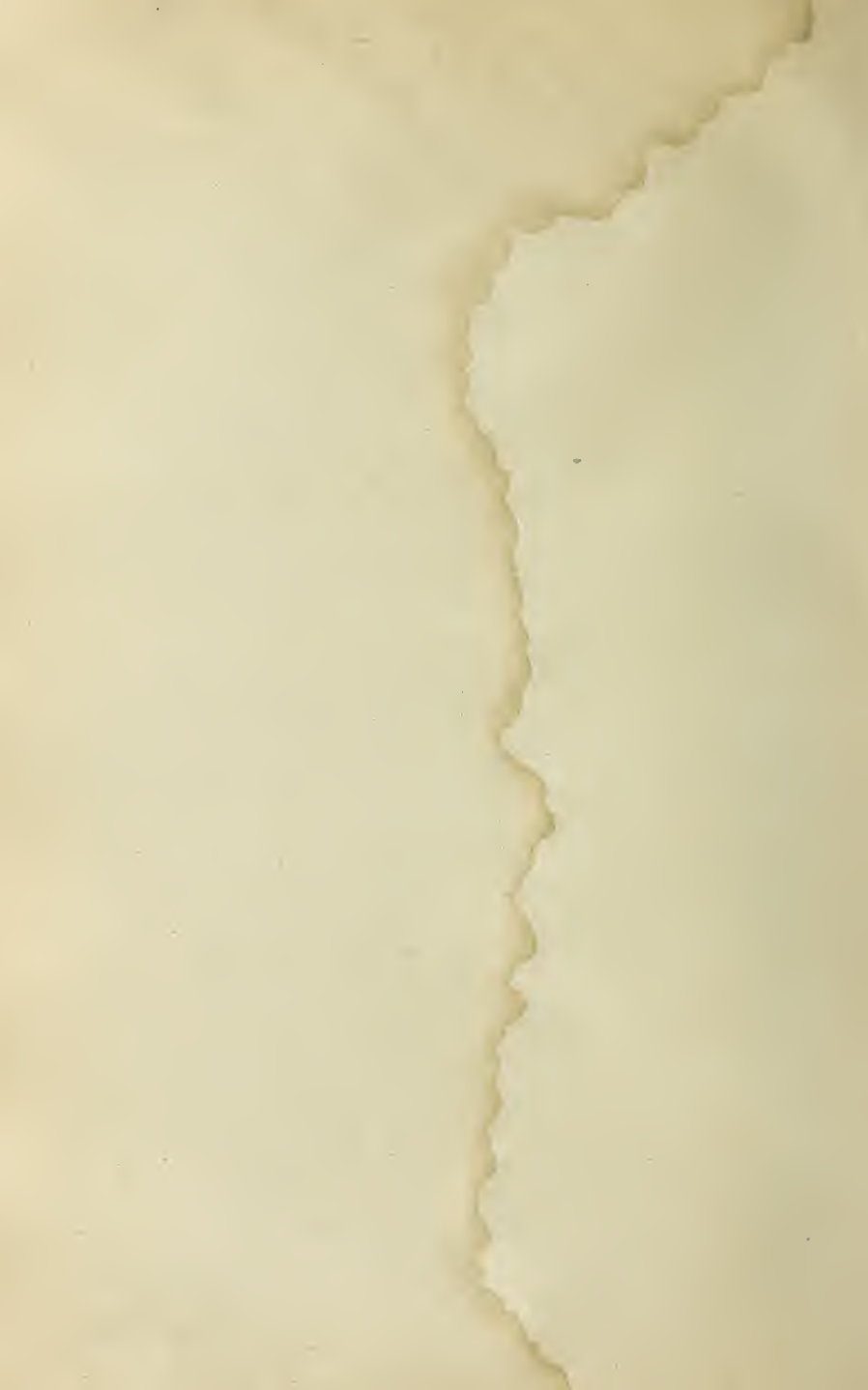
Wade, E.....	1904	White, H. F.....	1903
Wagner, W. E.....	1899	Wickett, T.....	1889
Wagner, H. L.....	1905	Wiggins, T. H.....	1890
Waldron, J.....	1903	Wilkinson, T. A.....	1898
Walker, E. W.....	1904	Williamson, D. A.....	1898
Wanless, A. A.....	1902	Williams, C. G.....	1903
Wass, S. B.....	1903	Willson, R. D.....	1901
Watson, R. B.....	1893	Wilson, N. D.....	1903
Watson, J. P.....	1904	Wilson, J. N.....	1906
Watt, G. H.....	1899	Withrow, W. J.....	1890
Weekes, M. B.....	1897	Withrow, F. D.....	1900
Weir, H. M.....	1900	Wood, E. M.....	1906
Weir, J. M.....	1904	Worthington, W. R.....	1904
Weldon, E. A.....	1897	Wright, C. H. C.....	1888
Wells, A. F.....	1904	Wright, R. T.....	1894
Whelihan, J. A.....	1903	Wright, W. F.....	1904
White, A. V.....	1892		

Y.

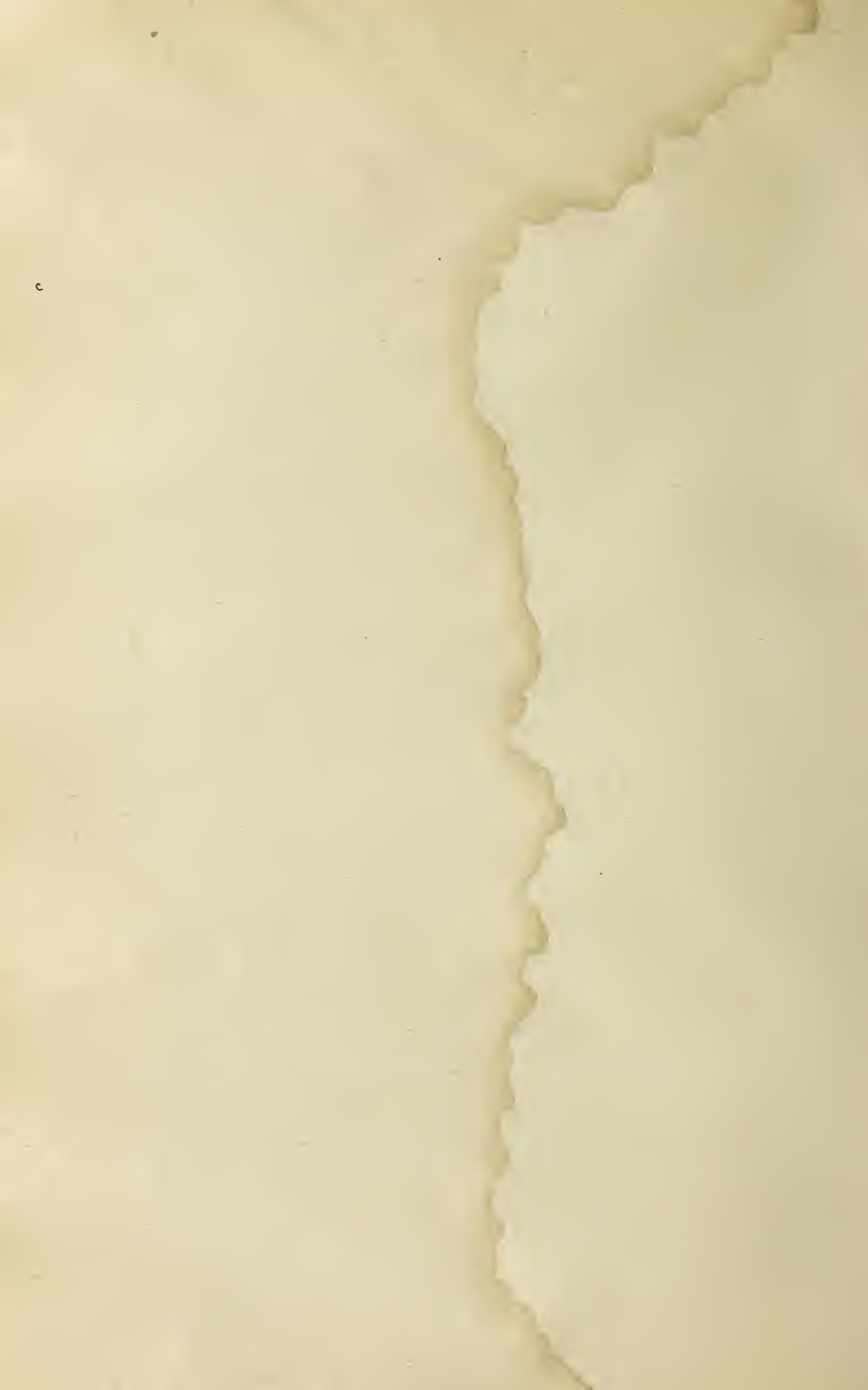
Yeates, E.....	1899	Young, W. H.....	1906
Young, C. R.....	1903		

Z.

Zahn, H. J.....	1902
-----------------	------







THE
CALENDAR

OF THE

University of Toronto



FACULTY OF
APPLIED SCIENCE AND ENGINEERING

1908 - 1909

TORONTO
THE UNIVERSITY PRESS

CONTENTS.

	PAGES.
CALENDARS	6
FACULTY LIST	8
HISTORICAL SKETCH	11
GRADUATING DEPARTMENTS.	12
DIPLOMA.	12
DEGREE OF B.A.Sc.	12
PROFESSIONAL DEGREES.	12
ADMISSION.	
GENERAL REGULATIONS	13
EQUIVALENT EXAMINATIONS	14
ADMISSION AD EUNDEM STATUM	15
TUITION FEES.	15
EXAMINATION AND DEGREE FEES	16
LODGING AND BOARD.	16
REGULATIONS RESPECTING STUDENTS	16
EXEMPTIONS.	17
REGULATIONS RESPECTING EXAMINATIONS	
REGULAR EXAMINATIONS	17
SUPPLEMENTAL EXAMINATIONS	17
VACATION WORK	18
HONORS.	18
PRIZES.	18
FELLOWSHIPS.	18
REGULATIONS RESPECTING LABORATORY WORK.	
FIELD WORK.	19
DRAFTING ROOMS.	19
OTHER LABORATORIES	19
REGULAR EXAMINATIONS.	
I YEAR.	20
II YEAR.	21
III YEAR.	22
DEPARTMENT OF CIVIL ENGINEERING.	
PROSPECTUS	24
TABULAR OUTLINE.	24 and 25
DEPARTMENT OF MINING ENGINEERING.	
PROSPECTUS	26
TABULAR OUTLINE.	26 and 27

DEPARTMENT OF MECHANICAL AND ELECTRICAL ENGINEERING.	
PROSPECTUS.	28
TABULAR OUTLINE.	28 and 29
DEPARTMENT OF ARCHITECTURE.	
PROSPECTUS.	30
TABULAR OUTLINE.	30 and 31
DEPARTMENT OF ANALYTICAL AND APPLIED CHEMISTRY.	
PROSPECTUS.	32
TABULAR OUTLINE.	32 and 33
DEPARTMENT OF CHEMICAL ENGINEERING.	
PROSPECTUS.	34
TABULAR OUTLINE.	34 and 35
OUTLINE OF LECTURE COURSES.	
YEARS I, II, III.	36
OUTLINE OF LABORATORY COURSES.	
YEARS I, II, III.	51
OUTLINE OF VACATION WORK.	
YEARS II, III.	59
REGULATIONS RESPECTING FOURTH YEAR. .	
ADMISSION.	60
ELECTIVE STUDIES	60
THESIS.	61
TERM WORK.	61
FINAL EXAMINATIONS	61
PASS AND HONOUR STANDINGS.	61
DEGREE OF B.A.Sc.	62
PROFESSIONAL DEGREES.	62
ACT RESPECTING DOMINION, ONTARIO, AND MANITOBA LAND SUR- VEYORS.	
	63
ONTARIO ARCHITECTS ACT.	
	65
OUTLINE OF FOURTH YEAR COURSES.	
	66
LABORATORY EQUIPMENTS.	
THERMODYNAMIC LABORATORY.	73
HYDRAULIC LABORATORY.	74
PHYSICAL LABORATORY.	75
STRENGTH OF MATERIALS LABORATORY.	75
CEMENT TESTING LABORATORY.	76
METROLOGICAL LABORATORY.	76
ELECTRICAL LABORATORY.	77
CHEMICAL LABORATORY	78
GEOLOGICAL AND MINERALOGICAL LABORATORY	78
ASSAYING LABORATORY.	79
MILLING AND CONCENTRATING LABORATORY	80
MUSEUM.	80

	PAGES.
LIBRARY.	81
ENGINEERING SOCIETY.	82
ATHLETIC CLUBS.	82
2ND FIELD CO. OF ENGINEERS.	84
GYMNASIUM.	85
FACULTY OF APPLIED SCIENCE Y.M.C.A.	86
STUDENTS IN ATTENDANCE.	87
PRIZEMEN.	95
GRADUATES IN APPLIED SCIENCE.	97
" CIVIL ENGINEERING.	100
" MINING ENGINEERING	101
" MECHANICAL ENGINEERING.	101
" ELECTRICAL ENGINEERING	101
GRADUATES OF SCHOOL OF PRACTICAL SCIENCE.	102
CERTIFICATES	141
INDEX TO GRADUATES.	142

CALENDAR, 1908.

JANUARY.							FEBRUARY.							MARCH.						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
..	..	..	1	2	3	4	..	..	..	..	..	..	1	1	2	3	4	5	6	7
5	6	7	8	9	10	11	2	3	4	5	6	7	8	8	9	10	11	12	13	14
12	13	14	15	16	17	18	9	10	11	12	13	14	15	15	16	17	18	19	20	21
19	20	21	22	23	24	25	16	17	18	19	20	21	22	22	23	24	25	26	27	28
26	27	28	29	30	31	..	23	24	25	26	27	28	29	29	30	31	..	..	..	..
..
APRIL.							MAY.							JUNE.						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
..	..	..	1	2	3	4	..	..	..	..	..	1	2	..	1	2	3	4	5	6
5	6	7	8	9	10	11	3	4	5	6	7	8	9	7	8	9	10	11	12	13
12	13	14	15	16	17	18	10	11	12	13	14	15	16	14	15	16	17	18	19	20
19	20	21	22	23	24	25	17	18	19	20	21	22	23	21	22	23	24	25	26	27
26	27	28	29	30	..	..	24	25	26	27	28	29	30	28	29	30	..	..	..	..
..	..	..	..	..	..	..	31	..	..	..	..	..	..	..	..	..	..	..	..	..
JULY.							AUGUST.							SEPTEMBER.						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
..	..	..	1	2	3	4	..	..	..	..	..	..	1	..	..	1	2	3	4	5
5	6	7	8	9	10	11	2	3	4	5	6	7	8	6	7	8	9	10	11	12
12	13	14	15	16	17	18	9	10	11	12	13	14	15	13	14	15	16	17	18	19
19	20	21	22	23	24	25	16	17	18	19	20	21	22	20	21	22	23	24	25	26
26	27	28	29	30	31	..	23	24	25	26	27	28	29	27	28	29	30	..	..	..
..	..	..	..	..	..	..	30	31	..	..	..	..	..	..	..	..	..	..	..	..
OCTOBER.							NOVEMBER.							DECEMBER.						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
..	..	..	..	1	2	3	1	2	3	4	5	6	7	..	..	1	2	3	4	5
4	5	6	7	8	9	10	8	9	10	11	12	13	14	6	7	8	9	10	11	12
11	12	13	14	15	16	17	15	16	17	18	19	20	21	13	14	15	16	17	18	19
18	19	20	21	22	23	24	22	23	24	25	26	27	28	20	21	22	23	24	25	26
25	26	27	28	29	30	31	29	30	..	..	..	..	..	27	28	29	30	31	..	..
..

CALENDAR, 1909.

JANUARY.							FEBRUARY.							MARCH.						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
..	..	..	..	..	1	2	..	1	2	3	4	5	6	..	1	2	3	4	5	6
3	4	5	6	7	8	9	7	8	9	10	11	12	13	7	8	9	10	11	12	13
10	11	12	13	14	15	16	14	15	16	17	18	19	20	14	15	16	17	18	19	20
17	18	19	20	21	22	23	21	22	23	24	25	26	27	21	22	23	24	25	26	27
24	25	26	27	28	29	30	28	..	..	..	..	..	..	28	29	30	31	..	..	..
31	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

APRIL.							MAY.							JUNE.						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
..	..	..	..	1	2	3	..	..	..	..	..	1	..	..	..	1	2	3	4	5
4	5	6	7	8	9	10	2	3	4	5	6	7	8	6	7	8	9	10	11	12
11	12	13	14	15	16	17	9	10	11	12	13	14	15	13	14	15	16	17	18	19
18	19	20	21	22	23	24	16	17	18	19	20	21	22	20	21	22	23	24	25	26
25	26	27	28	29	30	..	23	24	25	26	27	28	29	27	28	29	30	..	..	..
..	..	..	..	..	..	..	30	31	..	..	..	..	..	..	..	..	..	..	..	..

CALENDAR 1908-1909.

- 1908 Sept. 21 Meeting of Faculty Council.
 22 Supplemental Examinations begin.
 29 Registration of students begins.
- Oct. 1 First Term begins.
 Lectures and Practical Work begin.
 Last day for presentation of Vacation work.
 7 Meeting of Engineering Society.
 10 Meeting of Council.
 21 Meeting of Engineering Society.
- Nov. 4 Meeting of Engineering Society.
 6 Meeting of Council.
 18 Meeting of Engineering Society.
- Dec. 2 Meeting of Engineering Society.
 4 Meeting of Council.
 22 First Term ends.
1909. Jan. 6 Second Term begins.
 8 Meeting of Council.
 13 Meeting of Engineering Society.
 27 Meeting of Engineering Society.
- Feb. 5 Meeting of Council.
 10 Meeting of Engineering Society.
 24 Ash Wednesday—Building closed.
 25 Meeting of Engineering Society.
- Mar. 5 Meeting of Council.
 10 Meeting of Engineering Society.
 12 Annual Elections of Engineering Society.
 20 Last day for presentation of thesis for B.A.Sc.
 31 Annual Meeting of Engineering Society.
- April 2 Meeting of Council.
 9 Good Friday—Building closed.
 10 Lectures and Practical Work close.
 14 Annual Examinations begin.
- May 4 Meeting of Board of Examiners.
 10 Meeting of Council.
- June 11 Annual commencement.

The buildings will be closed on all public holidays, and daily at noon during July and August.

University of Toronto.

FACULTY OF APPLIED SCIENCE AND ENGINEERING.

President.....R. A. FALCONER, LL.D., D.D.

Dean of Faculty.....J. GALBRAITH, M.A., LL.D.

Secretary of Faculty.....A. T. LAING, B.A.Sc.

Bursar.....F. A. MOUBE, Esq.

- F. B. ALLAN, M.A., PH.D., *Associate Professor of Organic Chemistry.*
380 Brunswick Ave.
- G. R. ANDERSON, M.A., *Lecturer in Physics.*505 Euclid Ave.
- R. W. ANGUS, B.A.Sc., *Professor of Mechanical Engineering.*
42 Howland Ave.
- E. G. R. ARDAGH, B.A.Sc., *Lecturer in Chemistry.*25 Grange Road.
- J. W. BAIN, B.A.Sc., *Associate Professor of Applied Chemistry.*
393 Brunswick Ave.
- ALFRED BAKER, M.A., *Professor of Mathematics.*81 Madison Ave.
- B. A. BENSLEY, B.A., PH.D., *Associate Professor of Zoology.*
316 Brunswick Ave.
- M. C. BOSWELL, M.A., PH.D., *Lecturer in Chemistry*...100 Dewson St.
- C. A. CHANT, M.A., PH.D., *Associate Professor of Astro-Physics.*
52 Avenue Road.
- J. R. COCKBURN, B.A.Sc., *Lecturer in Descriptive Geometry.*
120 Albany Ave.
- A. P. COLEMAN, M.A., PH.D., *Professor of Geology*.....476 Huron St.
- W. HODGSON ELLIS, M.A., M.B., *Professor of Applied Chemistry.*
74 St. Alban St.
- J. H. FAULL, B.A., PH.D., *Associate Professor of Botany.*
102 Yorkville Ave.
- J. GALBRAITH, M.A., LL.D., *Professor of Engineering.*
62 St. Mary St.
- P. GILLESPIE, B.A.Sc., A.M. CAN. SOC. C.E., *Lecturer in Theory of Construction*.....63 Alexander St.
- J. MCGOWAN, B.A., B.A.Sc., *Associate Professor of Applied Mechanics.*
27 McMaster Ave.
- M. A. MACKENZIE, M.A., *Associate Professor of Mathematics.*
1 Bellwoods Park.
- G. R. MICKLE, B.A., *Professor of Mining*.....29 Prince Arthur Ave.
- W. L. MILLER, B.A., PH.D., *Professor of Physical Chemistry.*
50 St. Alban St.

- W. A. PARKS, B.A., PH.D., *Associate Professor of Mineralogy.*
69 Albany Ave.
- A. L. PARSONS, B.A., *Lecturer in Mineralogy.*145 Howland Ave.
- H. W. PRICE, B.A.Sc., *Lecturer in Electrical Engineering.*
5 Howland Ave.
- M. R. RIDDELL, B.A.Sc., *Lecturer in Mechanical Engineering.*
86 Spadina Road.
- T. R. ROSEBRUGH, M.A., *Professor of Electrical Engineering.*
666 Spadina Ave.
- L. B. STEWART, O.L.S., D.T.S., *Professor of Surveying and Geodesy.*
56 Yorkville Ave.
- R. B. THOMSON, B.A., *Lecturer in Botany.*
- W. M. TREADGOLD, B.A., *Lecturer in Surveying.*.....85 Gloucester St.
- T. L. WALKER, M.A., PH.D., *Professor of Mineralogy and Petrography.*
62 Maple Ave.
- C. H. C. WRIGHT, B.A.Sc., MEM. O.A.A., *Professor of Architecture.*
419 Markham St.

Sessional Appointments.

- E. W. BANTING, B.A.Sc., *Fellow in Surveying.*.....330 St. George St.
- S. BEATTY, B.A., *Fellow in Mathematics.*.....142 Collier St.
- W. A. BEGG, B.A.Sc., *Fellow in Drawing.*101 Willcocks St..
- W. C. BLACKWOOD, *Fellow in Physics.*.....10 Henry St.
- O. BOWLES, B.A., *Assistant in Mineralogy.*.....75 Robert St.
- A. J. CAMPBELL, B.A.Sc., *Demonstrator in Drawing.*.....84 Czar St.
- R. E. C. CHADWICK, *Fellow in Drawing.*.....99 Howland Ave.
- G. C. COWPER, *Fellow in Drawing.*.....109 McCaul St.
- S. R. CRERAR, B.A.Sc., *Demonstrator in Surveying.*.....425 Church St.
- C. S. DUNDASS, B.A.Sc., *Demonstrator in Electrical Engineering.*
88 Major St.
- S. DUSHMAN, B.A., *Demonstrator in Electrochemistry.*...36 Beatrice St.
- G. H. FERGUSON, *Fellow in Surveying.*.....52 Isabella St.
- H. S. FIERHELLER, B.A.Sc., *Demonstrator in Electrical Engineering.*
535 Sherbourne St.
- E. L. C. FORSTER, B.A., *Fellow in Chemistry*225 Robert St.
- W. W. GRAY, B.A.Sc., *Demonstrator in Thermodynamics.*
59 Sussex Ave.
- W. S. GUEST, B.A.Sc., *Demonstrator in Electrical Engineering.*
40 Gloucester St.
- W. F. GREEN, B.A., *Assistant in Mineralogy.*.....219 Robert St.
- R. H. HOPKINS, B.A.Sc., *Demonstrator in Electrical Engineering.*
414 Jarvis St.
- A. G. HUNTSMAN, B.A., M.B., *Instructor in Zoology.*
655 Spadina Ave.

W. JACKSON, <i>Fellow in Surveying</i>	13 Gloucester St.
A. E. JOHNS, B.A., <i>Fellow in Mathematics</i>	510 Spadina Ave.
J. D. KEPPY, <i>Fellow in Drawing</i>	177 Borden St.
H. M. LANCASTER, B.A.Sc., <i>Demonstrator in Chemistry</i> .	80 Bellevue Ave.
T. R. LOUDON, B.A.Sc., <i>Lecturer in Drawing</i>	133 Walmer Road.
A. W. MCCONNELL, B.A.Sc., <i>Lecturer in Architecture</i> .	722 Spadina Ave.
R. W. MOFFATT, B.A.Sc., <i>Fellow in Drawing</i> ..	54 Alexander St.
P. F. MORLEY, <i>Fellow in Chemistry</i>	177 Pearson St.
G. R. MUNRO, B.A.Sc., <i>Demonstrator in Drawing</i>	363 Huron St.
J. B. MINNS, <i>Fellow in Drawing</i>	699 Spadina Ave.
C. R. MURDOCH, <i>Fellow in Surveying</i>	34 Division St.
T. H. PLUNKETT, B.A.Sc., <i>Fellow in Drawing</i>	11 Bellevue Place.
R. B. POTTER, <i>Fellow in Physics</i>	21 Howland Ave.
J. F. PROCUNIER, <i>Fellow in Electrical Engineering</i>	1 Major St.
T. E. ROTHWELL, B.A.Sc., <i>Fellow in Chemistry</i>	574 Spadina Ave.
R. B. STEWART, <i>Assistant in Electrochemistry</i>	147 Beverley St.
W. G. SWAN, B.A.Sc., <i>Demonstrator in Strength of Materials</i> .	143 Bloor St. W.
L. R. THOMSON, B.A.Sc., <i>Demonstrator in Drawing</i> ..	244 Bloor St. W.
J. J. TRAILL, B.A.Sc., <i>Demonstrator in Hydraulics</i>	30 First Ave.
E. WADE, B.A., <i>Demonstrator in Mining</i>	617 Markham St.
C. R. YOUNG, B.A.Sc., <i>Lecturer in Applied Mechanics</i> .	100 Hazelton Ave.

Faculty of Applied Science and Engineering.

HISTORICAL SKETCH.

The Legislative Assembly during the Session of 1877 gave its sanction to the establishment of a School of Practical Science on the basis proposed in the memorandum of the Minister of Education confirmed by the Lieutenant-Governor in Council on the 3rd day of February, 1877.

By the scheme thus approved of, the Government effected an arrangement with the Council of University College whereby the students of the School of Practical Science enjoyed full advantage of the instruction given by its professors and lecturers in all the departments of science which were embraced in the work of the School.

This arrangement was brought to an end in 1889 by the transfer of the department of science above referred to, from University College to the University of Toronto under the operation of the University Federation Act.

In order that the students of the School might continue to enjoy the advantage of the instruction of the above departments, the Senate of the University of Toronto passed a Statute in October, 1889, affiliating the School to the University, which Statute was confirmed by the Lieutenant-Governor on the 30th day of October, 1889.

By an Order-in-Council, approved by the Lieutenant-Governor, on the 6th day of November, 1889, a Principal was appointed, and the management of the School was entrusted to a council composed of the Principal as chairman, and the Professors, Lecturers and Demonstrators appointed on the Teaching Faculty of the School.

By the terms of this order the management and discipline of the School was vested in the Council.

By a Statute of the Senate of the University of Toronto, passed on December 14th, 1900, the teaching staff and examiners of the School of Practical Science, together with the examiners for the degree of B.A.Sc., and professional degrees in Engineering, were constituted ex-officio the Faculty of Applied Science and Engineering of the University of Toronto.

By an Order-in-Council dated the 30th day of January, 1903, the Council of the School was made to consist of the Principal, the Professors and Lecturers, together with the Registrar.

By the University Act, 1906, the School of Practical Science was united to the University of Toronto as its Faculty of Applied Science and Engineering.

GRADUATING DEPARTMENTS.

There are six regular Departments of Instruction:—

1. Civil Engineering.
2. Mining Engineering.
3. Mechanical and Electrical Engineering.
4. Architecture.
5. Analytical and Applied Chemistry.
6. Chemical Engineering.

The instruction given in these departments is designed to give the student a thorough knowledge of the scientific principles underlying the practice in the several professions, and also such a training as may make him immediately useful when he commences actual professional work.

DIPLOMA.

The regular course in each department is of three years' duration and leads to a Diploma. The instruction is given partly in the lecture room and partly in the drafting rooms, laboratories and field. A certain amount of work is laid out for the summer vacation. The course of study in each department is general, and beyond the selection of his department the student has no opportunity to specialize.

DEGREE OF B.A.Sc.

After the general course is finished the Diploma is granted and the student is at liberty either to enter the active life of his profession or to spend another year in special work. Those electing to proceed with their studies are allowed to select two subjects from an approved list, and are required to confine their whole attention to these subjects during the fourth year. The subjects in that list are such as require a large amount of time to be devoted to laboratory and other practical work. The advanced theoretical instruction is given either at the beginning or end of the working-day, in order not to break up the time allotted to practical work. During this year the student is required to prepare a thesis on some subject connected with his work. After complying with all requirements, the candidate receives the degree of Bachelor of Applied Science (B.A.Sc.).

PROFESSIONAL DEGREES.

Bachelors of Applied Science may, after three years spent in professional work, present themselves for the degrees of Civil Engineer (C.E.), Mining Engineer (M.E.), Mechanical Engineer (M.E.), Electrical Engineer (E.E.), or Chemical Engineer (Chem. E.), as the case may be, subject to the rules and regulations established by the University.

ADMISSION.

Candidates will be admitted as undergraduate students in any of the regular departments of instruction on presenting satisfactory certificates of having passed the Junior or Senior Matriculation examination or its equivalent as defined hereafter; or of having passed in all the required subjects of such examination except Latin.

JUNIOR MATRICULATION.

GENERAL REGULATIONS.

Candidates for Junior Matriculation must produce satisfactory certificates of good character and of having completed the sixteenth year of their age.

The subjects of Junior Matriculation are as follows:—Latin, English, History, Mathematics and any two of the following: Greek, German, French, Experimental Science.

Pass and honour papers will be set in each of these subjects.

The pass papers are as follows:—Latin authors, Latin composition; English grammar, English composition, English literature; History; Arithmetic, Algebra, Plane Geometry; Greek authors, Greek composition; German authors, German composition; French authors, French composition; Experimental Science.

The pass standard is thirty-three per cent. of the marks assigned to a paper.

Candidates who have obtained pass standing in at least one-half of the subjects may complete Junior Matriculation by passing in the remaining subjects at a subsequent examination or examinations.

The examination for pass and honour Junior Matriculation is held annually in July at centres in Ontario, and, if application is made to the Senate, the examination may, with the co-operation of the Department of Education, be held at centres outside Ontario.

Applications accompanied by the fee of \$5.00 must be sent not later than the 24th of May to the local Public School Inspector, or in the case of candidates intending to write at the University, to the Registrar.

A Junior Matriculation examination, at which no honour papers are set, will be held in September at the University and at such other centres as may from time to time be authorized by the Senate. Candidates who have failed in a minority of subjects at a previous examination, as well as new candidates, may present themselves at this examination. Applications must be sent to the Registrar not later than the 1st of September.

EQUIVALENT EXAMINATIONS.

A person who has passed the matriculation examination of another University may be admitted *ad eundem statum* on such conditions as the Senate, on application, may prescribe.

The local examinations conducted by the University of Oxford and Cambridge are accepted *pro tanto*.

Certificates of having passed the whole, or at least one-half, of the subjects common to the matriculation and other examination of any of the following examinations will be accepted *pro tanto*.

Province of Ontario.

The Junior and Senior Teachers' examinations, or examinations of the same standard under other names.

Candidates who have already passed Part I. of the pass Junior Matriculation, or of the Junior Leaving examination, will not be required to pass again in the subjects thereof.

Province of Quebec.

The Associate in Arts examination.

Province of New Brunswick.

The examinations for Superior and Grammar School Licenses.

Province of Nova Scotia.

The Junior and Senior Leaving examinations (Grades XI. and XII.).

Province of Manitoba.

The Second Class Teachers' examination.

Province of British Columbia.

The Intermediate and Senior Grade examination.

Province of Prince Edward Island.

The First Class Teachers' License examination.

Province of Alberta.

The Standard VII. and VIII. examinations.

Province of Saskatchewan.

The Standard VII. and VIII. examinations.

Newfoundland.

Intermediate and Associate Grade examinations.

Candidates whose certificates do not cover all the subjects may complete matriculation by passing in the remaining subjects as prescribed by the University, or by passing in the subjects of similar standard as prescribed by the Education Department of the Province by which the certificate was issued.

The Senate will consider applications for the recognition of certificates other than those mentioned, as occasion may require.

ADMISSION AD EUNDEM STATUM.

An undergraduate of another University may be admitted *ad eundem statum* on such conditions as the Senate on the recommendation of the Council of the Faculty may prescribe.

An applicant for admission *ad eundem statum* must submit with his petition (1) a calendar of his University giving a full statement of the courses of instruction; (2) an official certificate of character and academic standing.

TUITION FEES.

First Year	\$70.00
Second Year	80.00
Third Year	90.00
Fourth Year	70.00

The tuition fees may be paid in one amount at the beginning of the session or in two equal instalments, one at the beginning of each term. Students desiring to pay in instalments must have paid the fees due in the first term before proceeding to the work of the second term.

A discount of \$5.00 will be allowed if the whole fee is paid on or before November 5th.

A discount of \$2.00 will be allowed on an instalment paid on or before the fifth day of the second month of the term in which it is due.

A penalty of \$1.00 per month will be imposed for fees not paid on or before the first day of the third month of a term.

The fees to be paid by a student repeating a year will be the regular fees for such year.

EXAMINATION AND DEGREE FEES.

Fourth Year examination fee.....	\$10.00
Fee for Degree of B.A.Sc.....	10.00

These fees must be paid on or before 1st day of April.

Fees are payable at the office of the Bursar during the hours from 10 A.M. to 1 P.M.

In no case will fees be received on Saturday.

DUES AND DEPOSITS.

Engineering Society membership	\$1.00
Deposit departments, 1, 2, 3, 4.....	5.00
Deposit departments, 5, 6 in first year.....	5.00
Deposit departments, 5, 6 second, third and fourth year.	9.00

These amounts must be paid to the Secretary of the Faculty at the time of registration.

The total expenses of a regular three years' course in any department is about \$360, which amount includes books, instruments and materials as well as the fees, etc., stated in above table.

Information as to the text books, instruments and materials to be purchased by the students will be given on registration at the beginning of the session.

LODGING AND BOARD.

Accommodation is readily obtainable in numerous private boarding-houses within convenient distance of the University, at a cost of from three dollars and a half upwards for comfortable lodging with board; or rooms may be rented at a cost from one dollar and a half per week upwards, and board obtained separately at moderate rates. A list of accredited boarding-houses is kept by the Secretary of the University College Young Men's Christian Association, and students are recommended to consult him with reference to the selection of suitable accommodation.

REGULATIONS RESPECTING STUDENTS.

No student will be enrolled in any year, or be allowed to continue in attendance, whose presence for any cause is deemed by the Council to be prejudicial to the interests of the University.

All interference on the part of any student with the personal liberty of another, by arresting him, or summoning him to appear before any tribunal of students, or otherwise subjecting him to any indignity or personal violence, is forbidden by the Council. In particular, students

of all Faculties are warned against the practices known as the "hustling" of freshmen and against inter-year or inter-faculty "hustles." Any student convicted of participation in such proceedings will render himself liable to expulsion from the University.

All students who are candidates for diplomas or certificates shall be in attendance during the whole of each term, unless exempted by special permission of the Council. The term will not be allowed to any student who has attended less than three-fourths of the required lectures and practical work, or who has been reported to the Council for bad conduct and adjudged guilty thereof.

Students are required to spend the hours of every working day between 9 a.m. and 5 p.m. at the work laid down in the time-table.

EXEMPTIONS.

Applications for exemption from any of the regulations must be made to the Council in writing and the particulars of the case fully stated.

REGULATIONS RESPECTING EXAMINATIONS.

Regular Examinations.

Candidates are required to send to the Secretary of the Faculty at least three weeks before the commencement of the Annual Examinations in April, notice in writing of their intention to take such examinations.

No student will be allowed to write at the Annual Examinations who has not paid all fees and dues for which he is liable.

The minimum percentage of marks required to pass in the written examinations will be fixed from time to time by the Council.

The minimum percentage of marks required to pass in the practical work connected with any subject shall be one and one-half times the minimum required in the case of a written examination.

In order to pass the practical examinations in the subjects of applied mechanics, descriptive geometry, electrical design, optics, surveying and architecture, the drawings set in these subjects must be made.

Candidates who fail in passing the Annual Examinations will be required to take again the whole course of instruction, both theoretical and practical, of the year in which they fail before presenting themselves a second time for examination.

Supplemental Examinations.

A candidate who fails in one or two subjects at the annual examinations, will be required to take supplemental examinations in such subjects.

The supplemental written examinations will begin on the 22nd of September, 1908.

Candidates are required to send to the Secretary of the Faculty at least three weeks before the commencement of the Supplemental Examinations in September, notice in writing of their intention to take such examinations.

In the case where a candidate fails to pass a supplemental examination it will count as one of the two supplemental examinations which may be allowed him after the next annual examination.

No candidate will be allowed to enter the Fourth Year who has not passed his supplemental examinations.

Vacation Work.

Vacation work must be handed in on or before the first day of the session.

Vacation notes must be on construction only, and contain not less than twenty, nor more than thirty pages of sketches. These sketches must be free-hand pencil drawings with figured dimensions.

No notes, whether taken during the session or the vacation, will be counted unless made in the standard note books of the School.

The minimum percentage of marks required for practical work must be made in the case of vacation notes.

Honors.

Honors will be granted in each department to the students who pass in all the subjects and obtain at least 66 per cent. of the total number of marks allotted to the department at the annual examinations.

Papers read before the Engineering Society may be considered in granting Honors.

The Honor list is arranged alphabetically.

Prize.

Through the liberality of Mr. T. Kennard Thomson, C.E., of New York, a prize of \$10 in books has been established in the department of Civil Engineering for general proficiency in the Third Year.

FELLOWSHIPS.

Fellowships of the value of \$500 each are awarded annually in the various departments. Each fellow is appointed annually and is eligible for re-appointment for a period not exceeding in all three years.

The fellows are required to take such portions of the work of instruction as may be assigned to them by the Council.

Application for these fellowships are to be made annually to the Secretary of the Faculty on or before the 1st day of May.

REGULATIONS RESPECTING LABORATORY WORK.

Students working in any laboratory must be governed by the regulations relating thereto as made known from time to time.

No laboratory reports or drawings may be removed from the laboratories without permission. The Council reserves the right to dispose of them as may be thought proper.

Field Work.

No field notes will be counted which have not been taken in the field, and during the hours allotted to such work.

Students taking practical astronomy are required to take observations in the field for time, latitude, and azimuth.

Drafting Rooms.

Drawings prescribed for the first term of the session will not be counted unless finished in that term.

The minimum number of drawings shall be twenty-five, and the maximum number thirty-five, except in the Department of Analytical and Applied Chemistry, in which the number shall be fifteen and twenty-five respectively.

No drawings will be counted which have not been made in the drafting rooms, and during the hours allotted to such work.

Other Laboratories.

Regulations are made known in the laboratories,

REGULAR EXAMINATIONS.

(APPROXIMATE LIST.)

I YEAR.

Examinations Held at the End of the Session.

Algebra	1,2,3,4,5,6.	Electricity and Magnetism .	3,5,6.
Plane Trigonometry . .	1,2,3,4,5,6.	Electric Circuits	3,5,6.
Analytical Geometry . .	1,2,3,4,5,6.	Elementary Chemistry .	1,2,3,4,5,6.
Descriptive Geometry . .	1,2,3,4,6.	Inorganic Chemistry	5,6.
Surveying	1,2,3,4,6.	History and Principles of	
Statics	1,2,3,4,6.	Architecture	4.
Dynamics	1,2,3,4,6.	Elementary Mineralogy .	1,2,4,5,6.

Examinations Held During the Session.

Drawing	1,2,3,4,5,6.
Surveying	1,2,4.
Architectural Sketching	4.
Experimental Electricity	3,5,6.
Practical Chemistry	1,2,3,4,5,6.
Determinative Mineralogy	1,2,4,5,6.
German	5,6.

- | | |
|--------------------------------------|---|
| 1. Civil Engineering. | 3. Mechanical and Electrical Engineering. |
| 2. Mining Engineering. | 4. Architecture. |
| 5. Analytical and Applied Chemistry. | 6. Chemical Engineering. |

II YEAR.

Examinations Held at the End of the Session.

Calculus	1,2,3,4,6.	Organic Chemistry	1,2,3,4.
Spherical Trigonometry	1,2.	Organic Chemistry	5,6.
Astronomy	1.	Physical Chemistry	5,6.
Descriptive Geometry	1,2,3,4,6.	Optics	1,2,3,4,5,6.
Surveying.	1,2,4.	Hydrostatics	1,2,3,4,5,6.
Dynamics of Rotation.	1,2,3.	Architectural Design	4.
Theory of Mechanism.	3.	History of Architecture.	4.
Steam Engines	3.	Orders of Architecture.	4.
Strength of Materials.	1,2,3,4,6.	History of Ornament.	4.
Electricity	3,5,6.	Metallurgy.	1,2,3,5,6.
Engineering Chemistry.	1,2,3,4,5,6.	Lithology	2.
Industrial Chemistry.	5,6.	Geology	1,2,5.

Examinations Held During the Session.

Drawing.	1,2,3,4,6.
Surveying	1,2,4.
Construction Notes	1,2,3,4,6.
Architectural Sketching	4.
Architectural Design	4.
Experimental Optics and Photography.	1,2,3,4,5,6.
Experimental Hydrostatics	1,2,3,4,5,6.
Experimental Electricity	3,5,6.
Practical Chemistry (qualitative)	1,2,3,4,6.
Practical Chemistry	2,5,6.
Determinative Mineralogy	1,2,5.
Lithology	2.
German.	5,6.

- | | |
|--------------------------------------|---|
| 1. Civil Engineering. | 3. Mechanical and Electrical Engineering. |
| 2. Mining Engineering. | 4. Architecture. |
| 5. Analytical and Applied Chemistry. | 6. Chemical Engineering. |

III YEAR.

Examinations Held at the End of the Session.

Method of Least Squares.....1.	Acoustics4.
Practical Astronomy and Geodesy1.	History of Architecture.....4.
Surveying and Levelling.....1,2.	History and Principles of Ornament4.
Descriptive Geometry1,2,4.	Architectural Design4.
Mechanics of Machinery.....3,3 ¹ .	Sanitary Science4.
Machine Design3,3 ¹ 6.	Heating and Ventilation.....4.
Thermodynamics.....1,2,3,3 ¹ ,6.	Specifications, Estimates and Contracts4.
Heat Engines3.	Building Materials4.
Hydraulics1,2,3,3 ¹ .	Cements and Concrete.....1.
Electricity1,2,4,5,6.	Foundations, Dams and Re- taining Walls1.
Magnetism and Electricity...3,3 ¹ .	Design of Tall Buildings.....4.
Alternating Current3,3 ¹ .	Mill Design3.
Electrical Design3 ¹ .	Theory of Construction..1,2,3,4,6.
Electrochemistry3 ¹ ,5,6.	Metallurgy2,5,6.
Engineering Chemis- try.1,2,3,3 ¹ ,4,5,6.	Ore Deposits2.
Industrial Chemistry5,6.	Mining and Ore Dressing.....2.
Organic Chemistry A.....5.	Economic Geology1,2,5.
Organic Chemistry B.....5.	Biology5.
Analytical Chemistry2,5,6.	

Examinations Held During the Session.

Drawing	1,2,3,3 ¹ ,4,6.
Surveying	1,2.
Construction Notes	1,2,3,3 ¹ ,4,6.
Architectural Sketching	4.
Architectural Design	4.
Experimental Heat	1,2,3,3 ¹ .
Experimental Acoustics	4.
Experimental Electricity	3,3 ¹ .
Practical Electrochemistry	3 ¹ ,5,6.
Practical Chemistry	2,5,6.
Experimental Biology	5.
Determinative Mineralogy	2,5.

Crystallography	2,5.
Assaying	2,5.
German.	5,6.

- | | |
|--------------------------------------|---|
| 1. Civil Engineering. | 3. Mechanical and Electrical Engineering,
Mechanical Options, 3 ¹ Mechanical
and Electrical Engineering, Electrical
Option. |
| 2. Mining Engineering. | 4. Architecture. |
| 5. Analytical and Applied Chemistry. | 6. Chemical Engineering. |

DEPARTMENT OF CIVIL ENGINEERING.

Department 1.

The courses of study in Civil Engineering are designed to give the student a sound training in the fundamental scientific principles on which the practice of the profession is based. The instruction is given by means of lectures and practical work in the field, the drafting room and the laboratory. In this way the student is lead to apply the principles developed in the class room.

Formerly the term Civil Engineering included all the branches of the profession, but some of these became so extensive as to acquire distinctive names and fields of work for themselves. Even yet Civil Engineering is so comprehensive as to render it impossible for anyone to master all its branches. It may be said to include surveying and topography; works connected with transportation, such as railroads and canals; municipal works, such as waterworks, sewers, streets and pavements; hydraulic works, such as power development, drainage, irrigation, etc.; structural works, such as bridges, roofs, etc.

Notwithstanding the variety of the branches of Civil Engineering above enumerated, they are underlaid by a comparatively compact body of scientific principles which form the basis of the work of instruction. While the subjects of the first year are largely fundamental, an effort is made, it is thought successfully, to give a professional aspect to the student's work from the very beginning. This is accomplished by the introduction of such subjects as field work, plotting, and practical mineralogy in the curriculum of the first year. In the second and third years the study of fundamental science is continued together with its application to the solution of engineering problems. In the fourth year the student selects one from among several courses of study which form a continuation of the work of the previous years. Here special stress is laid upon experimental work in the laboratory.

SUBJECTS OF INSTRUCTION.

I YEAR.

LECTURE COURSES.

	PAGE.		PAGE.
Algebra	42	Statics.	47
Plane Trigonometry	43	Dynamics	44
Analytical Geometry	43	Elementary Chemistry	38
Descriptive Geometry	40	Elementary Mineralogy	49
Surveying	50		

LABORATORY COURSES.

	PAGE.		PAGE.
Drawing	53	Practical Chemistry	51
Surveying	58	Determinative Mineralogy	57

II YEAR.

LECTURE COURSES.

	PAGE.		PAGE.
Calculus	43	Engineering Chemistry	38
Spherical Trigonometry	43	Organic Chemistry	39
Elementary Astronomy	49	Optics	46
Descriptive Geometry	40	Hydrostatics	45
Surveying	50	Metallurgy of Iron & Steel	48
Dynamics of Rotation	44	Geology	42
Strength of Materials	47		

LABORATORY COURSES.

	PAGE.		PAGE.
Drawing	53	Hydrostatics	56
Surveying	58	Practical Chemistry (Qualitative)	51
Optics	56	Determinative Mineralogy	57
Photography	56		

VACATION WORK.

Construction Notes, see page 59.

III YEAR.

LECTURE COURSES.

	PAGE.		PAGE.
Least Squares	43	Theory of Construction	47
Practical Astronomy and Geodesy	50	Foundations, Dams & Retaining walls	44
Descriptive Geometry	40	Engineering Chemistry	38
Surveying & Levelling	50	Economic Geology	42
Thermodynamics	48	Dynamic & Structural Geology	42
Hydraulics	45	Heat	45
Electricity	41	Cements & Concrete	44

LABORATORY COURSES.

	PAGE.		PAGE.
Drawing	54	Astronomy & Geodesy	57
Surveying	58	Heat	56

VACATION WORK.

Construction Notes, see page 59.

IV YEAR.

LECTURE AND LABORATORY COURSES.

See Permissible Options, pages 60 to 72.

DEPARTMENT OF MINING ENGINEERING.

Department 2.

The course in Mining Engineering is intended to serve as a preliminary training for those who expect to practice the art of mining or metallurgy. In the first two years it differs very little from the course in civil engineering, in the third year subjects peculiar to mining and metallurgy are taken up and some studies required in the other departments are omitted and in the fourth year the subjects are entirely different. By the choice of subject for thesis in the fourth year the student can follow his particular branch still further, and devote about one-quarter of the time in that year to the part of the studies which interests him most.

In general this course is designed to first give the student a good training in the parts of engineering essential to all branches such as surveying, drafting, etc., and then in the upper years to allow him to follow studies peculiar to mining engineering.

SUBJECTS OF INSTRUCTION.

I YEAR.

LECTURE COURSES.

	PAGE.		PAGE.
Algebra	42	Statics.	47
Plane Trigonometry	43	Dynamics.	44
Analytical Geometry	43	Elementary Chemistry	38
Descriptive Geometry.	40	Elementary Mineralogy	49
Surveying	50		

LABORATORY COURSES.

	PAGE.		PAGE.
Drawing	53	Practical Chemistry.	51
Surveying.	58	Determinative Mineralogy.	57

II YEAR.

LECTURE COURSES.

	PAGE.		PAGE.
Calculus.	43	Organic Chemistry	39
Spherical Trigonometry	43	Optics.	46
Descriptive Geometry	40	Hydrostatics.	45
Surveying	50	Metallurgy of Iron & Steel.	48
Dynamics of Rotation.	44	Lithology	49
Strength of Materials	47	Geology	42
Engineering Chemistry	38		

LABORATORY COURSES.

	PAGE.		PAGE.
Drawing.	53	Practical Chemistry (Qualitative).	51
Surveying.	58	Practical Chemistry (Quantitative).	51
Optics	56	Determinative Mineralogy	57
Photography	56	Lithology	49
Hydrostatics	56		

VACATION WORK.

Construction Notes, see page 59.

III YEAR.

LECTURE COURSES.

	PAGE.		PAGE.
Descriptive Geometry	40	Analytical Chemistry.	38
Surveying & Levelling	50	Metallurgy	48
Thermodynamics	48	Ore Deposits	42
Hydraulics.	45	Mining and Ore Dressing	49
Electricity	41	Economic Geology	42
Theory of Construction.	47	Dynamic & Structural Geology.	42
Engineering Chemistry.	38	Heat.	45

LABORATORY COURSES.

	PAGE.		PAGE.
Drawing.	54	Determinative Mineralogy	57
Surveying.	58	Crystallography	49
Heat.	56	Assaying	52
Practical Chemistry	52		

VACATION WORK.

Construction Notes, see page 59.

IV YEAR.

LECTURE AND LABORATORY COURSES.

See Permissible Options, pages 60 to 72.

DEPARTMENT OF MECHANICAL AND ELECTRICAL ENGINEERING.

Department 3.

The courses of study in the Department of Mechanical and Electrical Engineering are designed to afford training of value to those who may wish to follow any of the branches of activity in connection with mechanical or electrical industries. The course of instruction is necessarily planned on broad lines, as there is great variety in subsequent occupation.

In the first two years no distinction is made between mechanical and electrical students, whose work includes training in mathematics, chemistry, mechanics, electricity, metallurgy, surveying, drawing, etc., treated broadly, yet with a view toward engineering applications.

Third year men are allowed to separate somewhat into mechanical and electrical sections. Mechanical men spend considerable time on more advanced work in machine and structural design of various kinds, while those who prefer electrical work are engaged with electrochemistry, design of electric machinery, and further study of theory and operation of alternating and continuous current apparatus. Both sections are required to participate in the study of such subjects as hydraulics, thermodynamics, electricity, engineering, chemistry, theory of stresses in stationary and moving structures, etc.

The fourth year is devoted to more advanced study in a few subjects chosen by each student from certain groups made possible by his previous work. Most of the time is spent in laboratory investigations and studies resulting therefrom.

During the whole course considerable time is devoted to work in various laboratories described elsewhere.

SUBJECTS OF INSTRUCTION.

I YEAR.

LECTURE COURSES.

	PAGE.		PAGE.
Algebra	42	Statics.	47
Plane Trigonometry	43	Dynamics.	44
Analytical Geometry	43	Electricity & Magnetism	40
Descriptive Geometry.	40	Electric Circuits	41
Surveying	50	Elementary Chemistry	38

LABORATORY COURSES.

	PAGE.		PAGE.
Drawing	53	Practical Chemistry.	51
Experimental Electricity	55		

II YEAR.

LECTURE COURSES.

PAGE.	PAGE.
Calculus. 43	Electricity 41
Descriptive Geometry. 40	Engineering Chemistry 38
Dynamics of Rotation 44	Organic Chemistry 39
Theory of Mechanism 48	Optics. 46
Steam Engines 47	Hydrostatics. 45
Strength of Materials 47	Metallurgy of Iron & Steel. . . 48

LABORATORY COURSES.

PAGE.	PAGE.
Drawing. 53	Experimental Electricity 55
Optics 56	Practical Chemistry (Qualitative). 51
Photography 56	
Hydrostatics 56	

VACATION WORK.

Construction Notes, see page 59.

III YEAR, MECHANICAL OPTION (3).

LECTURE COURSES.

PAGE.	PAGE.
Mechanics of Machinery 46	Alternating Current 41
Machine Design 46	Engineering Chemistry. 38
Thermodynamics 48	Mill Design 46
Heat Engines 45	Theory of Construction. 47
Hydraulics. 45	Heat. 45
Magnetism & Electricity 41	

LABORATORY COURSES.

PAGE.	PAGE.
Drawing. 54	Experimental Electricity 55
Heat. 56	

VACATION WORK.

Construction Notes, see page 59.

III YEAR, ELECTRICAL OPTION (3').

LECTURE COURSES.

PAGE.	PAGE.
Mechanics of Machinery 46	Alternating Current 41
Machine Design 46	Electrical Design 42
Thermodynamics 48	Electrochemistry 38
Hydraulics. 45	Engineering Chemistry. 38
Magnetism & Electricity 41	

LABORATORY COURSES.

PAGE.	PAGE.
Drawing. 54	Experimental Electricity 55
Heat. 56	Practical Electrochemistry . . . 52

VACATION WORK.

Construction Notes, see page 59.

IV YEAR.

LECTURE AND LABORATORY COURSES.

See Permissible Options, pages 60 to 72.

DEPARTMENT OF ARCHITECTURE.

Department 4.

The course in Architecture extends over a period of four years and leads to the degree of Bachelor of Applied Science.

The instruction in this department is arranged to lay a broad foundation for the subsequent professional life of its graduates, and incidentally, to prepare its students to be immediately useful in an architect's office. The curriculum has been arranged to meet the æsthetic and scientific needs of the profession, and includes History and Principles of Architecture, Freehand Drawing in pencil, ink and color, Architectural Design, Analysis and Criticism of Buildings, Mathematics, Statics, Strength and Elasticity of Materials, Theory of Construction and Heating and Ventilation.

The equipment of the department includes a working library of 1,000 volumes, a large file of periodicals, 2,500 photographs, 2,000 stereographic photos, 4,500 lantern slides, and a large collection of models and casts.

SUBJECTS OF INSTRUCTION.

I YEAR.

LECTURE COURSES.

PAGE.	PAGE.
Algebra 42	Dynamics. 44
Plane Trigonometry 43	Elementary Chemistry 38
Analytical Geometry 43	History & Principles of Archi-
Descriptive Geometry. 40	tecture. 36
Surveying 50	Elementary Mineralogy 49
Statics. 47	

LABORATORY COURSES.

PAGE.	PAGE.
Drawing 53	Practical Chemistry. 51
Surveying. 58	Determinative Mineralogy. 57
Architectural Sketching 51	

II YEAR.

LECTURE COURSES.

	PAGE.		PAGE.
Calculus.	43	Optics.	46
Descriptive Geometry	40	Hydrostatics.	45
Surveying	50	Architectural Design	37
Strength of Materials	47	History of Architecture	36
Engineering Chemistry	38	Orders of Architecture	36
Organic Chemistry	39	History of Ornament.	36

LABORATORY COURSES.

	PAGE.		PAGE.
Drawing.	54	Hydrostatics	56
Surveying.	58	Practical Chemistry (Qualita-	
Architectural Sketching	51	tive).	51
Optics	56	Architectural Design	51
Photography	56		

VACATION WORK.

Construction Notes, see page 59.

III YEAR.

LECTURE COURSES.

	PAGE.		PAGE.
Electricity	41	Sanitary Science.	37
Descriptive Geometry.	40	Heating & Ventilation	37
Acoustics	44	Specifications, Estimates and	
History of Architecture	36	Contracts	37
History & Principles of Orna-		Building Materials.	37
ment.	37	Design of Tall Buildings.	37
Architectural Design	37	Theory of Construction.	47

LABORATORY COURSES.

	PAGE.		PAGE.
Drawing.	54	Acoustics.	56
Architectural Sketching	51	Architectural Design	51

VACATION WORK.

Construction Notes, see page 59.

IV YEAR.

LECTURE AND LABORATORY COURSES.

See Permissible Options, pages 60 to 72.

DEPARTMENT OF ANALYTICAL AND APPLIED CHEMISTRY

Department 5.

The course in Analytical and Applied Chemistry is designed to furnish instruction suitable for those students who intend to practice chemistry as a profession, either as analysts or as works chemists.

SUBJECTS OF INSTRUCTION.

I YEAR.

LECTURE COURSES.

PAGE.	PAGE.
Algebra 42	Electric Circuits 41
Plane Trigonometry 43	Elementary Chemistry 38
Analytical Geometry 43	Inorganic Chemistry 39
Electricity & Magnetism 40	Elementary Mineralogy 49

LABORATORY COURSES.

PAGE.	PAGE.
Drawing 53	Determinative Mineralogy. 57
Experimental Electricity 55	German. 56
Practical Chemistry. 51	

II YEAR.

LECTURE COURSES.

PAGE.	PAGE.
Electricity 41	Optics 46
Engineering Chemistry 38	Hydrostatics 45
Industrial Chemistry. 38	Metallurgy of Iron & Steel. 48
Organic Chemistry 39	Geology 42
Physical Chemistry 39	

LABORATORY COURSES.

PAGE.	PAGE.
Optics 56	Practical Chemistry 52
Photography 56	Determinative Mineralogy 57
Hydrostatics 56	German 56
Experimental Electricity 55	

III YEAR.

LECTURE COURSES.

	PAGE.		PAGE.
Electricity	41	Analytical Chemistry	38
Electrochemistry	38	Biology	37
Engineering Chemistry	38	Metallurgy	48
Industrial Chemistry	38	Economic Geology	42
Organic Chemistry A	39	Dynamic & Structural Geology .	42
Organic Chemistry B	39	Heat	45

LABORATORY COURSES.

	PAGE.		PAGE.
Practical Electrochemistry. . .	52	Crystallography	49
Practical Chemistry	52	Assaying.	52
Experimental Biology	51	German	56
Determinative Mineralogy. . .	57		

IV YEAR.

LECTURE AND LABORATORY COURSES.

See Permissible Options, pages 60 to 72.

DEPARTMENT OF CHEMICAL ENGINEERING.

Department 6.

In many industries there is a demand for a man who combines the technical knowledge of the mechanical engineer with a knowledge of chemistry. It is to fill this want that the course of Chemical Engineering is designed.

SUBJECTS OF INSTRUCTION.

I YEAR.

LECTURE COURSES.

	PAGE.		PAGE.
Algebra	42	Dynamics.	44
Plane Trigonometry	43	Electricity & Magnetism	40
Analytical Geometry	43	Electric Circuits	41
Descriptive Geometry.	40	Elementary Chemistry	38
Surveying	50	Inorganic Chemistry.	39
Statics.	47	Elementary Mineralogy	49

LABORATORY COURSES.

	PAGE.		PAGE.
Drawing	53	Determinative Mineralogy.	57
Experimental Electricity	55	German	56
Practical Chemistry.	51		

II YEAR.

LECTURE COURSES.

	PAGE.		PAGE.
Calculus.	43	Organic Chemistry	39
Descriptive Geometry	40	Physical Chemistry	39
Strength of Materials	47	Optics	46
Electricity.	41	Hydrostatics	45
Engineering Chemistry	38	Metallurgy of Iron & Steel.	48
Industrial Chemistry	38		

LABORATORY COURSES.

	PAGE.		PAGE.
Drawing	54	Experimental Electricity	55
Optics	56	Practical Chemistry	52
Photography	56	German	56
Hydrostatics	56		

VACATION WORK.

Construction Notes, see page 59.

III YEAR.

LECTURE COURSES.

	PAGE.		PAGE.
Machine Design	46	Industrial Chemistry.	38
Thermodynamics	48	Analytical Chemistry.	38
Electricity	41	Theory of Construction.	47
Electrochemistry.	38	Metallurgy.	48
Engineering Chemistry	38	Heat.	45

LABORATORY COURSES.

	PAGE.		PAGE.
Drawing	55	Practical Chemistry.	52
Practical Electrochemistry. . . .	52	German	56

VACATION WORK.

Construction Notes, see page 59.

IV YEAR.

LECTURE AND LABORATORY COURSES.

See Permissible Options, pages 60 to 72.

OUTLINE OF LECTURE COURSES.

ARCHITECTURE.

HISTORY OF ARCHITECTURE.

The aim of the courses of lectures in History is to trace the development of the Art of Architecture from the earliest days through the planning, construction, materials and design of the buildings described.

The various conditions which have combined to give to the buildings of different countries, and those of the same country at different periods, their distinctive character, are analyzed.

HISTORY AND PRINCIPLES OF ARCHITECTURE (ELEMENTARY).

Required in Department 4, Year I; 1 hour per week; both terms.

In this course the development of architecture is treated very briefly and in an elementary manner, from the pyramids of Egypt to the present, laying special emphasis on the Egyptian and Western Asiatic work.

CLASSIC ARCHITECTURAL HISTORY.

Greek, Roman.

Required in Department 4, Year II; 2 hours per week; both terms.

MEDIAEVAL ARCHITECTURAL HISTORY.

Byzantine, Romanesque, Gothic.

Required in Department 4, Year III; 1 hour per week; both terms.

MODERN ARCHITECTURAL HISTORY.

The Renaissance, Modern.

Required in Department 4, Year IV; 1 hour per week; both terms.

HISTORY OF ORNAMENT.

HISTORY OF ANCIENT ORNAMENT.

Egyptian, Assyrian, Greek, Roman.

Required in Department 4, Year II; 1 hour per week; both terms.

HISTORY OF MEDIAEVAL ORNAMENT.

Byzantine, Romanesque, Gothic.

Required in Department 4, Year III; 1 hour per week; both terms.

HISTORY OF MODERN ORNAMENT.

Renaissance, Modern.

Required in Department 4, Year IV; 1 hour per week; both terms.

ARCHITECTURAL DESIGN.

Elements of planning and composition.

Required in Department 4, Year II; 1 hour per week; both terms.

ARCHITECTURAL DESIGN.

Theory of design, planning and composition, scale, proportion, expression and decoration.

Required in Department 4, Year III.

THE DESIGN OF TALL BUILDINGS.

Required in Department 4, Year III; 1 hour per week; both terms.

The structural features particularly incident to tall building work are taken up, such as the discussion of deep foundations, grillages, arrangement of columns and beams, fire-proofing, wind bracing, details, etc. This course is chiefly of a descriptive character.

Text:—Architectural Engineering by J. K. Freitag.

BUILDING MATERIALS.

The structural and æsthetic value of the various building materials.

Required in Department 4, Year III; 2 hours per week; both terms.

Specifications, Estimates and Contracts.

Required in Department 4, Year III; 1 hour per hour; both terms.

SANITARY SCIENCE.

Modern plumbing, its design and installation.

Required of Department 4, Year III; 1 hour per week; both terms.

HEATING AND VENTILATION.

The design of the different systems, where they should be used, heating specifications, etc.

Required of Department 4, Year III; 1 hour per week; both terms.

BIOLOGY.**ELEMENTARY BIOLOGY.**

Required in Department 5, Year III; 3 hours per week.

An elementary course of lectures on the general structure and identification of plants and animals and the use of the microscope in the examination of tissues and products.

CHEMISTRY.

ANALYTICAL CHEMISTRY.

Required in Departments 2, 5, and 6, Year III; 1 hour per week; both terms.

Select methods of chemical analysis covering alkalimetry and acidimetry, technical analysis.

ENGINEERING CHEMISTRY.

Required in Departments 1, 2, 3, 4, 5 and 6, Year II; 1 hour per week; second term.

A study of the industrial production and applications of heat and light, and of the chemistry of fuel and the products of combustion.

ELEMENTARY CHEMISTRY.

Required in Departments 1, 2, 3, 4, 5, and 6, Year I; 2 hours per week; both terms.

Elementary chemistry with experimental illustrations.

Text book:—Briefer Course—Remsen.

ENGINEERING CHEMISTRY.

Required in Departments 1, 2, 3, 3¹, 5, and 6, Year III; 1 hour per week; both terms.

The application of chemistry to engineering problems, air, water, sewage, the materials of construction, explosives, etc.

ELECTROCHEMISTRY.

Required in Departments 3¹, 5, and 6, Year III; 1 hour per week; both terms.

An elementary course illustrated by experiments.

INDUSTRIAL CHEMISTRY—INORGANIC.

Required in Departments 5 and 6, Year II; 1 hour per week; both terms.

Manufacture of salts, acids, alkalies, and inorganic chemicals.

Text book:—Industrial Chemistry—Thorp.

INDUSTRIAL CHEMISTRY—ORGANIC.

Required in Departments 5 and 6, Year III; 1 hour per week; both terms.

The study of petroleum and its products, coaltar and its products, the destructive distillation of wood, fats, oils, soap, sugar, starch, and gum; fermentation industries, etc.

Text book:—Industrial Chemistry—Thorp.

INORGANIC CHEMISTRY.

Required in Departments 5 and 6, Year 1; 1 hour per week; both terms.

A study of the elements and their important inorganic compounds.

Text book:—Introduction to General Inorganic Chemistry—Alex. Smith.

ORGANIC CHEMISTRY.

Required in Departments 1, 2, 3, 4, 5 and 6, Year II; 1 hour per week; first term.

An elementary course.

Text book:—Organic Chemistry—Remsen.

ORGANIC CHEMISTRY.

Required in Departments 5 and 6, Year II; 2 hours per week; both terms.

An elementary course dealing with the aliphatic and aromatic series of compounds.

Text book:—Organic Chemistry—Remsen.

ORGANIC CHEMISTRY (A).

Required in Department 5, Year III; 2 hours per week; both terms.

A detailed study of the compounds of carbon, and of laboratory methods.

Text books:—Organic Chemistry—Perkins and Kipping; Lehrbuch der Organischen Chemie—Meyer und Jacobsen; Arbeitsmethoden für Organisch Chemische Laboratorien—Lassar-Cohn; Synthetic Dye Stuffs—Cain and Thorpe.

ORGANIC CHEMISTRY (B).

Required in Department 5, Year III; 1 hour per week; second term.

This course includes the consideration of the several kinds of stereo isomerism, desmotropism, etc.

PHYSICAL CHEMISTRY.

Required in Departments 5 and 6, Year II; 2 hours per week; both terms.

An introductory course on the elements of chemical mechanics, and the theory of solutions.

DRAWING.

DESCRIPTIVE GEOMETRY.

Required in Departments 1, 2, 3, 4, and 6, Year I; 1 hour per week; both terms.

This course of lectures deals chiefly with the principles of orthographic and oblique projections and the application of such principles to the solution of problems relating to straight lines and planes.

Text books:—Church, Elements of Descriptive Geometry; Millar, Descriptive Geometry.

Reference:—Davidson.

DESCRIPTIVE GEOMETRY.

Required in Departments 1, 2, 3, 4 and 6, Year II; 1 hour per week; both terms.

This course of lectures is a continuation of the work taken in the first year with the following additions: Problems relating to curved surfaces, principles of shades and shadows, and perspective.

DESCRIPTIVE GEOMETRY.

Required in Departments 1 and 2, Year III; 1 hour per week; first term.

This course of lectures deals with spherical projection, the principles of map making, and the graphical solution of spherical triangles.

DESCRIPTIVE GEOMETRY.

Required in Department 4, Year III; 1 hour per week; first term.

Advanced work in shades and shadows and perspective.

ELECTRICITY.

MAGNETISM AND ELECTRICITY.

Required in Departments 3, 5, 6, Year I; 2 hours per week; first term.

A course of lectures on general principles relating to magnetism, electricity, electromagnetism, electrostatics, etc., illustrated largely from engineering apparatus.

Text book:—Elementary Electricity and Magnetism, by S. P. Thompson.

ELECTRIC CIRCUITS.

Required in Departments 3, 5, 6, Year I; 2 hours per week; second term.

This course of lectures concerns chiefly fundamental principles relating to electric circuits and leads to consideration of such problems as the distribution of electric energy through lines and networks and the division of load between generators.

Text book:—Electrical Problems, by Hooper and Wells.

ELECTRICITY.

Required in Departments 3, 5, 6, Year II; 2 hours per week; both terms.

Deals with the theory of electrical measurements, and detailed study of various methods applicable under different conditions in engineering practice to the measurement by resistance, current, potential difference, power and energy; calibration of commercial measuring instruments. The effect of choice conditions of measurement on the result is considered.

Text book:—Electrical Measurements, by Carhart and Patterson.

ELECTRICITY.

Required in Departments 1, 2, 4, 5, 6, Year III; 1 hour per week; both terms.

A course designed to fit the requirements of non-electrical students. A study of essential principles is followed by discussion of electrical apparatus, plants, power transmission, railways, etc.

Text book:—Elementary Electricity and Magnetism, by Jackson.

MAGNETISM AND ELECTRICITY.

Required in Department 3, Year III; Options 3 and 3¹; 3 hours per week; first term.

A course of lectures on theory of magnetism and magnetic circuits, theory of continuous current generators, etc.

Text book:—Elements of Electrical Engineering, by Franklin & Esty.

ALTERNATING CURRENT.

Required in Department 3, Year III; Options 3 and 3¹; 2 hours per week; second term.

A first course of lectures on the subject, covering principles of measurement and leading to the analytical and graphical treatment of the simpler problems relative to alternating current circuits and machinery.

Text book:—Alternating Currents, by Franklin and Williamson.

ELECTRICAL DESIGN.

Required in Department 3, Year III; Option 3¹; 2 hours per week; second term.

A course of lectures dealing with design of electric machinery and plants, accompanied by designs to be worked out in the drafting rooms.

References:—Dynamo Electric Machinery, by S. P. Thompson; Electric Machine Design, by Parshall and Hobart.

GEOLOGY.

DYNAMIC AND STRUCTURAL GEOLOGY.

Required by Departments 1, 2 and 5, Year III; 2 hours per week; first term.

Reference books, as in Historical Geology.

ECONOMIC GEOLOGY.

Required by Departments 1, 2 and 5, Year III; 2 hours per week; second term.

A study of the more important economic rocks, minerals and ores with their geological associations. Special attention paid to Canadian deposits.

HISTORICAL GEOLOGY.

Required by Departments 1, 2 and 5, Year II; 1 hour per week. This course deals chiefly with historical geology with special reference to Canadian formations.

Reference books:—Scott, Introduction to Geology; Dana, Text Book of Geology.

ORE DEPOSITS.

Required by Department 2, Year III; 1 hour per week.

Discussion of the origin and classification of ore deposits in a general way, the mode of occurrence of the chief metals, and statistics of production, special attention being given to the metals mined in Canada.

MATHEMATICS.

ALGEBRA.

Required in Departments 1, 2, 3, 4, 5 and 6, Year I; 1 hour per week; both terms.

Simple equations of one, two and three unknown quantities; quadratic equations of one and two unknown quantities; elementary treatment of variations, proportions and progressions; interest forms and annuities, permutations, combinations, binominal theorem.

Text book:—De Lury, Intermediate Algebra.

ANALYTICAL GEOMETRY.

Required in Departments 1, 2, 3, 4, 5 and 6, Year I; 1 hour per week; both terms.

The course in Elementary Analytical Geometry covers the more familiar propositions in connection with the straight line, circle, parabola, ellipse and hyperbola. The subject is treated so as to illustrate the general methods of analytical geometry.

CALCULUS, DIFFERENTIAL AND INTEGRAL.

Required in Departments 1, 2, 3, 4 and 6, Year II; 2 hours per week; both terms.

This is an elementary course in the infinitesimal calculus, but adequate to afford a knowledge of the character and methods of the subject and to enable students in chemistry, engineering, etc., to understand such of their text books as introduce this calculus.

LEAST SQUARES, METHOD OF.

Required in Department 1, Year III; 1 hour per week; second term.

The course of lectures includes: The general principles of probability, the law of error, direct measurements of equal and different weights; mean square and probable errors; indirect measurements; conditioned observations; applications to empirical constants and formulæ, etc.

Text book:—Merriman's Least Squares.

TRIGONOMETRY, PLANE.

Required in Departments 1, 2, 3, 4, 5 and 6, Year I; 2 hours per week; both terms.

Trigonometrical ratios with their relations to one another, sines, etc., of the sum and difference of angles with deduced formulas, solutions of triangles, expressions for the area of triangles, radii of circumscribed, inscribed and escribed circles.

Text book:—Plane & Fawdry's Practical Trigonometry.

TRIGONOMETRY, SPHERICAL.

Required in Departments 1 and 2, Year II; 2 hours per week; first term.

The course of lectures includes the derivation of formulæ and their application to the solution of triangles and to practical problems.

Text book:—Todhunter & Leatham's Spherical Trigonometry.

MECHANICS.

ACOUSTICS.

Required in Department 4, Year III; 1 hour per week; both terms.

The general principles of acoustics, reflection, transmission and absorption of sound. The application to building acoustics.

CEMENTS AND CONCRETE.

Required in Department 1, Year III; 1 hour per week; second term.

A short course of lectures on the testing of cements, the use of concrete plain and reinforced, and the theory of reinforced concrete.

DYNAMICS.

Required in Departments 1, 2, 3, 4 and 6, Year I; 2 hours per week; both terms.

Kinematics and dynamics of rigid bodies, motion of translation, acceleration, graphics, the laws of motion, impulse and momentum, work and energy, power of pumps, etc.

Text book:—Tutorial Dynamics—Briggs & Bryan.

DYNAMICS OF ROTATION.

Required in Departments 1, 2, 3 and 6, Year II; 1 hour per week; both terms.

Angular motion, velocity and acceleration, moment of inertia, simple harmonic motion, the pendulum, centres of mass, suspension and percussion, the phenomena of rotating bodies with special reference to such as fly wheels, governors, etc.

Text book:—Dynamics of Rotation—Worthington.

FOUNDATIONS, RETAINING WALLS AND DAMS.

Required in Department 1, Year III; 1 hour per week; both terms.

This course of lectures is devoted to a consideration of the design of the structures mentioned. Preparatory to the discussion of the practical aspects of the subject, the theory of the forces tending to produce failure is dealt with, and the sustaining power of soils receives attention. The most approved forms of construction of footings, piers, abutments, retaining walls and dams are then described. Special mention is made of the adaptability of various materials for dams, such as earth, masonry, timber and concrete.

Text books and books of reference:—A Practical Treatise on Foundations, by W. M. Patton; A Treatise on Masonry Construction, by I. O. Baker; Walls, Bins and Grain Elevators, by M. S. Ketchum; Design and Construction of Dams, by E. Wegmann.

HEAT.

Required in Departments 1, 2, 3, 5 and 6, Year III; 1 hour per week; first term.

Thermometry and calorimetry, gas laws, latent and specific heat, expansion, mechanical equivalent, pyrometry. Course introductory to thermodynamics.

HEAT ENGINES.

Required in Department 3, Year III; 1 hour per week; both terms.

This course in heat engines is intended for students in Mechanical Engineering, to be supplementary to the general course of lectures in Thermodynamics given in the third year.

The principal forms of heat engines are dealt with in a more or less descriptive manner; and special attention is given to the consideration of points affecting the design of the ordinary forms of steam engines, gas engines and oil engines.

HYDROSTATICS.

Required in Departments 1, 2, 3, 4, 5 and 6, Year II; 1 hour per week; second term.

Laws of fluid pressure and application to machines, density of solids and fluids, theory of flotation. This course is introductory to courses in hydraulics and marine engineering.

HYDRAULICS.

Required in Departments 1, 2, 3 and 3¹, Year III; 2 hours per week; both terms.

This course of lectures is devoted to the development and discussion of fundamental formulæ relating to the flow of water in pipes, the measurement of discharge by various methods, such as orifices and weirs, the conditions of flow obtaining in open channels, artificial and natural, and in pipes flowing partially full; together with other kindred subjects.

The object of the course is to provide the student with a good working knowledge of the fundamental principles of hydraulics; such as is useful in practical work and is necessary to the intelligent investigation of more problems, such as the design of turbines, water wheels and power plants generally.

Text book:—Treatise on Hydraulics—Merriman.

MACHINE DESIGN.

Required in Departments 3, 3¹ and 6, Year III; 2 hours per week; both terms.

This course of lectures is principally concerned with the application of the principles of kinematics and the theory of strength and elasticity of materials to the design of machine parts, such as frames of machines, shafting, gearing, clutches, journals, etc.

In connection with these lectures the design of some particular machine is discussed and the student is required, as his practical work in the subject, to make, with all necessary calculations, a drawing of an original design of such a machine.

Text book:—Unwin, Elements of Machine Design.

MECHANICS OF MACHINERY.

Required in Departments 3 and 3¹, Year III; 2 hours per week; first term, and 1 hour per week; second term.

In this course the questions dealt with are the construction of acceleration diagrams, the determination of the accelerations of various parts of machines, the kinetic energy of machines, the effect of the weights and accelerations of parts on the velocity of the fly-wheel and the proper weight of the latter to fulfil given conditions. The theory of various forms of governors is also fully taken up and the efficiency of machines. The design of slide valves and gears is taken up in this course.

Text books:—Kennedy, Mechanics of Machinery; Halsey, Slide Valve Gears.

MILL BUILDING DESIGN.

Required in Department 3, Year III; 1 hour per week; both terms.

The structural problems involved in the design of steel mill buildings are discussed in this course of lectures. Types of buildings, various styles of trusses, columns and details are described and the complete design of a steel mill building is worked out in the class and drafting rooms.

Text book:—Mill Building Design, by Milo S. Ketchum.

OPTICS.

Required in Departments 1, 2, 3, 4, 5 and 6, Year II; 1 hour per week; first term.

The laws of reflection, refraction and transmission of light, photometry; theory of optical instruments; industrial photography and blue printing.

STATICS.

Required in Departments 1, 2, 3, 4 and 6, Year I; 2 hours during the week; both terms.

This course of lectures deals with forces in a single plane, and concerns chiefly the calculation of tension, compression and shearing stresses in frame structures and solid beams. It also deals with the consideration of problems relating to friction.

STEAM ENGINES.

Required of Department 3, Year II; 1 hour per week; first term.

This course of lectures includes a discussion of the principles of action of the steam engine; also the theory and design of various simple forms of valve gears used in the operation of such engines.

STRENGTH OF MATERIALS.

Required in Departments 1, 2, 3, 4 and 6, Year II; 2 hours per week; both terms.

Elasticity and strength of materials mathematically treated, including tension, compression and shear; the strength of pipes, boilers and riveted joints; stresses and deflections in beams and columns; tension and shear in shafts; suddenly applied loads; repeated stresses; resilience.

Text book:—Mechanics of Materials—Merriman.

THEORY OF CONSTRUCTION.

Required in Department 1, Year III; 2 hours per week; both terms.

Required in Departments 2, 3, 4 and 6, Year III; 2 hours per week; first term.

In the first term, the theory relating to the design of box and plate girders is covered fully, and the complete design of a plate girder span is worked out in the class and in the drafting rooms. Continuous and trussed beams, including the practical design of a typical member of this class, complete the term's work.

The second term is given chiefly to the design of a highway and a railway bridge; the complete designs being made in the lectures and in the drafting rooms. Some consideration is given to the three hinged steel arch and to the masonry arch.

Text books:—Roofs and Bridges, Part III, Bridge Design, by Merriman and Jacoby; Carnegie, Pocket Companion or Cambria Steel.

THEORY OF MECHANISM.

Required in Department 3, Year II; 2 hours per week; both terms.

This course of lectures treats of the motions of machines, the latter being assumed to be of sufficient strength to resist acting forces. The formation of machines is dealt with in a general way and investigations of the velocities of points and links are made. The design of gear teeth and the applications of trains of gears are taken up, also problems in static equilibrium.

Text books:—Kennedy, *Mechanics of Machinery*; Goodeve, *Elements of Mechanism*.

THERMODYNAMICS.

Required of Departments 1, 2, 3, 3¹ and 6, Year III.; 2 hours per week; both terms.

In this course of lectures the subject is treated in such a way as to make it of practical value and give a working acquaintance with the principles on which it is based. After the elementary ideas have been given and the proofs of the properties of Carnot's cycle, applications of the subject are made to the perfect gas and to saturated steam and to the various types of engines. Temperatures are taken from the air thermometer.

METALLURGY.

METALLURGY OF IRON AND STEEL.

Required in Departments 1, 2, 3, 5 and 6, Year II.; 1 hour per week; both terms.

The physical properties of iron and steel and the circumstances that influence the strength, etc., of iron. The different modes of manufacture of iron and steel and the effect of different processes of making on the resulting products. Explanations of specifications for iron and steel adopted by engineers.

METALLURGY OF GOLD, SILVER, ETC.

Required in Departments 2, 5, and 6, Year III.; 1 hour per week; both terms.

The important metals other than iron are taken up in this course of lectures. The theory and practice of the art of metallurgy by which these metals are produced from their ores is explained and illustrated.

MINING AND ORE DRESSING.

Required in Department 2, Year III; 1 hour per week; both terms.

The practice of crushing and pulverizing in different ways is explained and illustrated. The theory and practice of wet concentration of coarse and fine products, also dry concentration, magnetic, by oil, etc. The different methods of mining. Most of the time is spent on the theory and evolution of the art of ore dressing.

Text book:—Ihlseng, Manual of Mining.

MINERALOGY.**CRYSTALLOGRAPHY.**

Required in Departments 2 and 5, Year III; 1 hour per week.

A course devoted to lectures and practical work on the geometrical and optical properties of crystals, preparing the student for the study of rocks in thin sections and for the examination of crystallized substances, natural and artificial, under the polarizing microscope.

ELEMENTARY MINERALOGY.

Required in Departments 1, 2, 4, 5 and 6, Year I; 1 hour per week.

After introducing the student to the chief chemical, physical and crystallographic characteristics of minerals, the course becomes descriptive and deals with about one hundred of the minerals most important from the industrial or scientific point of view.

Text books:—Dana, Minerals and how to study them; and Dana, Text Book of Mineralogy.

LITHOLOGY.

Required in Department 2, Year II; 1 hour per week.

A course of lectures and laboratory work introducing the student to the microscopic study of rocks.

Text book:—Kemp, Handbook of Rocks.

SURVEYING.**ASTRONOMY, ELEMENTARY.**

Required in Department 1, Year II; 1 hour per week; both terms.

A course in descriptive Astronomy; explaining the ordinary astronomical terms; and describing the various celestial bodies and their motions. In the evenings opportunity will be given for identifying the stars and for observing with telescopes.

Text book:—Introduction to Astronomy, by F. R. Moulton.

ASTRONOMY AND GEODESY.

Required in Department 1, Year III; 2 hours per week; both terms.

The course of lectures deals with the determination of time, latitude, longitude and azimuth, by methods adapted to the use of the surveyor's transit and the sextant. It is designed to fulfil the requirements of the final examinations for Ontario and Dominion Land Surveyors.

In Geodesy an account is given of the principles and methods of a secondary triangulation survey, also of the principles involved in the North-West system of survey.

Text books:—Doolittle's Practical Astronomy as applied to Geodesy and Navigation; Nautical Almanac, 1909.

SURVEYING.

Required in Departments 1, 2, 3, 4 and 6, Year I; 1 hour per week; both terms.

The lecture course includes—the general principles; surveying with the chain, the compass and chain and the transit and chain; the applications of trigonometry to inaccessible heights and distances; mensuration of surfaces and solids, co-ordinate surveying, division of land, etc.

Text books:—Gillespie's Land Surveying; Johnson's Theory and Practice of Surveying.

SURVEYING.

Required in Departments 1, 2 and 4, Year II; 1 hour per week; both terms.

This course of lectures takes up in detail simple reverse, compound and transition curves as applied to railroad surveying. It also includes stadia, plane table and photographic surveying as applied to topographic work and also the main features of mine and hydrographic surveying.

Text books:—Henck, Shunk, Searles (Field books for Engineers); Theory and practice surveying—Johnson; Plane surveying—Raymond.

SURVEYING AND LEVELLING.

Required in Departments 1 and 2, Year III; 1 hour per week; first term.

This course of lectures takes up the work of the railroad engineer on construction, including profiles, cross sectioning, computation of volume of earth work, overhaul, spiralling curves, laying out turnouts, frogs and switches, etc.

Also a discussion of trigonometric and barometric levelling.

Text books:—Field Engineering—Searles; Railroad Curves and Earthwork—Allen.

OUTLINE OF LABORATORY COURSES.

ARCHITECTURE.

ARCHITECTURE.

Work on freehand drawing, pen and ink drawing, architectural sketching in black and white, and in color, architectural design.

BIOLOGY.

ELEMENTARY BIOLOGY.

Required in Department 5, Year III; 3 hours per week.

An elementary course of laboratory work on the general structure and identification of plants and animals, and the use of the microscope in the examination of tissues and products.

CHEMISTRY.

PRACTICAL CHEMISTRY.

Required in Department 5, Year I; about 17 hours per week; both terms.

Quantitative experiments illustrating the use of the sensitive balance and confirming the fundamental laws of chemistry: Qualitative Inorganic Analysis; Quantitative Analysis of Pure Salts.

Text book:—A Manual of Chemical Analysis—Newth.

PRACTICAL CHEMISTRY.

Required in Departments 1, 2, 3, 4 and 6, Year I; 3 hours per week; first term.

An elementary course of experiments to illustrate the use of the sensitive balance to verify some of the laws which form the basis of the science and to serve as an introduction to quantitative laboratory methods. Instructions given as required before each period.

PRACTICAL CHEMISTRY.

Required in Departments 1, 2, 3 and 4, Year II; 3 hours per week; both terms.

Qualitative Analysis applied to the metals.

Text book:—A Smaller Analysis—Newth.

PRACTICAL CHEMISTRY.

Required in Department 2, Year II; 3 hours per week; both terms.

Gravimetric determination of metals and acid radicles.

Text book:—A Manual of Chemical Analysis, Qualitative and Quantitative—Newth.

PRACTICAL CHEMISTRY.

Required in Department 5, Year II; about 14 hours per week; both terms.

The course comprises gravimetric and volumetric estimation of metals, acidimetry and alkalimetry and the preparation of inorganic and organic substances.

Text books:—A Manual of Chemical Analysis, Qualitative and Quantitative—Newth; Practical Methods of Organic Chemistry—Gattermann.

PRACTICAL CHEMISTRY.

Required in Department 6, Year II; 6 hours per week; both terms.

In this course qualitative chemical analysis is well covered, also a certain amount of gravimetric analysis applied to the metals and acid radicals.

Text book:—A Manual of Chemical Analysis—Newth.

PRACTICAL CHEMISTRY.

Required in Department 2, Year III; 3 hours per week, first term; 8 hours per week, second term.

This course includes acidimetry and alkalimetry and the technical analysis of ores and furnace products.

Text book:—A Manual of Chemical Analysis—Newth.

PRACTICAL CHEMISTRY.

Required in Department 5, Year III; about 15 hours per week; both terms.

Technical analysis of iron and steel alloys, ores, furnace products, ceramic materials, foods, etc.; also gas analysis and organic preparations.

PRACTICAL CHEMISTRY.

Required of Department 6, Year III; 11 hours per week; both terms.

Technical analytical methods, acidimetry and alkalimetry, etc.

PRACTICAL ELECTROCHEMISTRY.

Required in Departments 3¹, 5 and 6, Year III; 3 hours per week; first term.

Quantitative measurements to accompany the elementary electrochemistry lectures.

ASSAYING.

Required in Department 2, Year III;
Fire assaying of various ores for gold, silver and lead.

DRAWING.**DRAWING.**

Required in Departments 1 and 2, Year I; about 16 hours per week.

Copying from the flat, lettering, topography; graphical solution of problems in statics; problems in descriptive geometry, relating to both orthographic and oblique projections; the plotting of original surveys; measured drawings.

DRAWING.

Required in Department 4, Year I; about 15 hours per week.

Copying from the flat, lettering, topography, freehand drawing in black and white, both from copies and models; the graphical solution of problems in statics; problems in descriptive geometry, relating to both orthographic and oblique projections; measured drawings.

DRAWING.

Required in Department 5, Year I; about 9 hours per week.

Copying from the flat, lettering, measured drawings.

DRAWING.

Required in Departments 3 and 6, Year I; about 20 hours per week.

Copying from the flat, lettering, topography; graphical solution of problems in statics; problems in descriptive geometry, relating to both orthographic and oblique projections; measured drawings.

DRAWING.

Required in Departments 1 and 2, Year II; about 17 hours per week.

Coloring and shading as applied to both topographical and construction drawings; problems in descriptive geometry relating to solids bounded by curved surfaces; principles of shades, shadows, and perspective; solution of problems in optics and strength of materials; measured drawings; elementary design.

DRAWING.

Required in Department 3, Year II; about 20 hours per week.

Coloring and shading as applied to construction drawings; problems in descriptive geometry relating to solids bounded by curved surfaces; principles of shades, shadows, and perspective; solution of problems in optics, theory of mechanism and strength of materials; measured drawings; elementary design.

DRAWING.

Required in Department 4, Year II; about 17 hours per week. Coloring and shading as applied to construction drawings. Free-hand drawing, including water colors and monochrome; exercises from the orders of architecture; problems in descriptive geometry, relating to solids bounded by curved surfaces; principles of shades, shadows and perspective; solution of problems in optics and strength of materials; measured drawings; elementary design.

DRAWING.

Required in Department 6, Year II; about 16 hours per week. Same as Department 3, with exception that Department 6 does not include theory of mechanism.

DRAWING.

Required in Department 1, Year III; about 17 hours per week. Principles of map making, spherical projection, plotting of original surveys relating to topographical and railway work; problems in thermodynamics and theory of construction; original design of various structures; measured drawings.

DRAWING.

Required in Department 2, Year III; about 8 hours per week. Principles of map making, spherical projection, plotting of original surveys, relating to topographical and railway work and mining; problems in thermodynamics and theory of construction; original design; measured drawings.

DRAWING.

Required in Department 3, Year III; about 14 hours per week. Problems in thermodynamics, mechanics of machinery and theory of construction; original design of framed structures and machines; measured drawings.

DRAWING.

Required in Department 3¹, Year III; about 12 hours per week. Problems in thermodynamics and mechanics of machinery; original design of electrical and other machines; measured drawings.

DRAWING.

Required in Department 4, Year III; about 14 hours per week. Problems in descriptive geometry, shades, shadows and perspective; problems in theory of construction; advanced work in water colors and monochrome; original design including framed structures; measured drawings.

DRAWING.

Required in Department 6, Year III; about 12 hours per week. Problems in thermodynamics and theory of construction; original design of framed structures and machines.

ELECTRICITY.**ELECTRICITY.**

Required in Departments 3, 5 and 6, Year I; 3 hours alternate weeks; both terms.

A course of experiments, given in logical order to every man, designed to demonstrate fundamental principles in connection with the generation and flow of currents in electrical circuits. The work is associated with the lecture courses, magnetism and electricity, and electric circuits.

ELECTRICITY.

Required in Departments 3, 5 and 6, Year II; 3 hours per week; both terms.

This laboratory course is closely associated with the lecture course on electricity for Year II men. The more important and useful methods of testing generators and circuits for electromotive force, resistance, current, grounds, etc., are practised, often under conditions such as occur in practice. The work also includes methods of calibration of voltage, current, power, and energy meters, and certain studies of properties of incandescent lamps.

ELECTRICITY.

Required in Department 3, Year III; Options 3, 3¹; 4½ hours per week for 3; 6 hours per week for 3¹; both terms.

This laboratory course is intended to afford the student an opportunity to become familiar with principles involved in continuous current shunt, series and compound wound generators and motors, and, to some extent, alternating current circuits and machinery. Other sections of the work deal with illuminating engineering, the magnetic properties of iron and steel, and study of iron losses in transformers and generators.

The course is arranged to stand in close relation to the lecture courses, magnetism and electricity, and electrical design for Year III, and to certain drafting room work.

The mechanical section, option 3, covers broadly the same ground as the electrical section, option 3¹, but is not required to investigate various subjects as completely.

GERMAN.**GERMAN.**

Required in Departments 5 and 6, Years I, II, III; 1 hour per week; both terms.

The course is arranged to give the student a reading knowledge of scientific German. In the first year grammar is studied in sufficient detail to take up the reading of German text books and current chemical literature in the subsequent years.

MECHANICS.**ACOUSTICS.**

Required in Department 4, Year III; $1\frac{1}{2}$ hours per week; both terms.

Verification of laws of vibrating strings, velocity of sound, Melde's & Lissajous' experiments, testing absorption and reverberation.

HEAT.

Required in Departments 1, 2, 3, 3¹, Year III; $1\frac{1}{2}$ hours per week; both terms.

Calibration of thermometers, determination of latent and specific heat, verification of gas laws, co-efficients of expansion, mechanical equivalent, etc.

HYDROSTATICS.

Required in Departments 1, 2, 3, 4, 5 and 6, Year II; $1\frac{1}{2}$ hours per week; second term.

Experiments on determination of specific gravity of solids and fluids. Determination of pressure, etc.

OPTICS.

Required in Departments 1, 2, 3, 4, 5 and 6, Year II; $1\frac{1}{2}$ hours per week; both terms.

Reflection and refraction, optical constants of lenses and mirrors, theory of optical instruments.

PHOTOGRAPHY.

Required in Departments 1, 2, 3, 4, 5 and 6, Year II; 1 hour per week; second term.

Making of negatives from the round and from the flat. Preparing negatives for printing. Printing for various purposes. Blue printing.

MINERALOGY.**ELEMENTARY DETERMINATIVE MINERALOGY.**

Required in Departments 1, 2, 4, 5 and 6, Year I; 1 hour per week; second term.

An opportunity is afforded the student to examine the series of minerals described in course 1. Test examinations on description of minerals, crystals and crystal models and on sight determination of minerals.

Text books:—Same as for course 1.

BLOW PIPE ANALYSIS AND DETERMINATIVE MINERALOGY.

Required in Departments 1 and 2, Year II; 3 hours per week; second term.

(a) Demonstrations in the use of the blow pipe for the determination of minerals. (b) Identification of minerals by means of physical properties.

Text books:—Brush-Penfield, Determinative Mineralogy and Blow Pipe Analysis; Eakle, Mineral Tables.

BLOW PIPE ANALYSIS AND DETERMINATIVE MINERALOGY.

Required in Department 5, Year II; 3 hours per week.

The student is introduced to the application of the blow pipe to the determination of minerals and is afforded an opportunity of becoming acquainted with the more important minerals.

Text book:—Brush-Penfield, Determinative Mineralogy and Blow Pipe Analysis.

DETERMINATIVE MINERALOGY.

Required in Departments 2 and 5, Year III; 3 hours per week; first term.

This work is a continuation of the work in courses 4 and 16.

The student is given exercises in the application of physical and blow pipe tests to the identification of minerals.

Text book:—Brush-Penfield, Determinative Mineralogy and Blow Pipe Analysis.

SURVEYING.**ASTRONOMY AND GEODESY.**

Required in Department 1, Year III; 2 hours per week; both terms.

The practical work in this subject comprises observations in the field with the transit and sextant for the determination of time, latitude and azimuth by the methods described in the lectures.

FIELD WORK.

Required in Departments 1, 2 and 4, Year I; 12 hours per week; first term.

This course comprises—testing chains; practice in chaining; a complete survey of a piece of land with the chain; keeping of field notes; the use of the compass and transit in surveying closed figures and traverse lines and in ranging straight lines; plotting by latitudes and departures and otherwise; computing areas.

FIELD WORK.

Required in Departments 1 and 2, Year II; 9 hours per week; first term.

- (A) This course of instruction embraces all adjustments of the transit, accurate determination of angles of closed figure, minor problems in triangulation—ordinary and special problems as applied to railroad work in regard to curves, simple, reverse, compound and transition track centreing, profile levelling and plotting of profile.

FIELD WORK.

Required in Department 4, Year II; 9 hours per week; first term.

- (B) This course includes adjustment of the levels, accurate differential levelling, profile levelling and plotting of same. Cross sectioning and computation of earthwork, adjustment of transit and its use in laying out curves, simple, reverse, etc.

FIELD WORK.

Required in Departments 1 and 2, Year III; 9 hours per week; first term.

This includes adjustments of levels and accurate check differential levelling, determination of profile, cross sectioning and computation of earthwork of located line on ground and plotting of same. Also cross sectioning by use of hand level. Instruction in the use of the Lugeol and Rochon micrometers and location of points by means of the plane table. A complete stadia topographic survey is made and plotted. The spiralling of curves on track already laid down and practical methods of locating and placing switches and sidings.

OUTLINE OF VACATION WORK.

CONSTRUCTION NOTES.

Required in Departments 1, 2, 3, 4 and 6, Years II and III.

The construction notes required consist of neat and complete dimensioned sketches in pencil of any structures or machines which may be of interest. Any object chosen should be represented and dimensioned in such manner that it could be completely constructed from the notes as the only available information.

THE FOURTH YEAR.

Students who have obtained the diploma given on the completion of the general three years' course in any department or who have fulfilled the conditions for the diploma with the exception of the period of practical work required in the department of Mechanical and Electrical Engineering are recommended to take up the special work of the fourth year leading to the degree of Bachelor of Applied Science.

The fourth year enables students to continue under certain restrictions subjects in which they may be specially interested, thus affording in a measure the advantages of elective studies.

The subjects of the fourth year are arranged in the following groups and subdivisions from which candidates must select two subdivisions. Except by special permission of the Council, these subdivisions must be from one group.

- A. { Astronomy.
Geodesy and Metrology.
- B. { Architecture.
Strength and Elasticity of Materials.
Hydraulics.
Thermodynamics and Theory of Heat Engines.
Applied Electricity.
Electrochemistry.
- C. { Industrial Chemistry.
Sanitary and Forensic Chemistry.
Electrochemistry.
Inorganic and Organic Chemistry.
- D. { Mineralogy and Geology.
Metallurgy and Assaying.

Students are required to pursue a course of study in either French or German during the fourth year and to take the examinations therein.

Candidates are required to notify the Secretary of the Faculty, in writing, at least two weeks before the opening of the session, of the subjects which they have selected. These subjects will be submitted to the Council for approval.

Undergraduates in the Faculty of Arts of fourth year standing in the Honour Department of Chemistry and Mineralogy may be admitted as students of the fourth year in group C.

Undergraduates in the Faculty of Arts of fourth year standing in the Honour Department of Chemistry and Mineralogy and graduates in the Honour Department of Geology and Mineralogy may be admitted as

Fourth Year students in group D. provided that they have previously taken such back work in the Faculty of Applied Science as may be considered necessary by the Council. In order to afford the opportunity for this back work such candidates are required to make application to the Council at least one year in advance.

Each student is required to prepare a thesis on a subject approved by the Council.

Except in cases where the Council gives permission to the contrary before the thesis is begun, the title of the thesis must be sent to the Council for approval before the regular meeting in November.

The completed thesis must be handed to the Secretary of the Faculty not later than the first day of March and shall become the property of the University. Applications for extension of time beyond the date given must be made to the Council before the regular meeting in January.

PASS AND HONOURS.

The minimum percentages for pass are as follows:—

TERM WORK:—

Examinations of work in each laboratory in each term..... 50

The examinations in French and German will be included in the term work.

A student who in either term of the session, through neglect or lack of ability, fails to perform the practical work of his course in a manner satisfactory to the professors in charge, will not be permitted to present himself at the final examinations of the year except by special permission of the council.

A report of the results of the term work and examinations must be made by the professor in charge, to the council at the close of each term.

ANNUAL EXAMINATIONS:—

Each examination	33
Thesis.	50

The minimum percentages for honours are as follows:—

Term work of the session.....	75
Each of the two subdivisions at the Annual Examinations.	66
Thesis.	75

The Annual Examinations for the degree shall be held in April and the Supplemental examinations in September.

DEGREE OF BACHELOR OF APPLIED SCIENCE (B.A.Sc.).

Each candidate who has completed the fourth year and who holds the diploma of the Faculty of Applied Science or is of full Fourth Year standing in the Honour Department of Chemistry and Mineralogy or is a graduate in the Honour Department of Geology and Mineralogy will be entitled to receive the degree of Bachelor of Applied Science (B.A.Sc.).

The degree with honours will be conferred on each candidate otherwise eligible who has obtained three honours at the annual examinations.

PROFESSIONAL DEGREES.

The attention of graduates is directed to the following regulations respecting professional degrees.

The following degrees have been established: Civil Engineer (C.E.), Mining Engineer (M.E.), Mechanical Engineer (M.E.), Electrical Engineer (E.E.), Chemical Engineer (Chem.E.), subject to the following regulations:—

1. A candidate for one of the said degrees shall hold the diploma of the School of Practical Science or of the Faculty of Applied Science and Engineering and the degree of Bachelor of Applied Science except in the case provided for in clause 11 hereunder.
2. He shall have spent at least three years after receiving the degree of Bachelor of Applied Science in the actual practice of the branch of engineering wherein he is a candidate for a degree.
3. Intervals of non-employment or of employment in other branches of engineering shall not be included in the above three years. It shall not be necessary that the several periods requisite to make up the said three years be consecutive.
4. Satisfactory evidence shall be submitted to the University examiners as to the nature and length of the candidate's professional experience for the purpose of clauses 2 and 3.

The Examiners shall satisfy themselves by oral or written examinations in regard to the candidate's experience and competence.

5. The candidate shall prepare an original thesis on some engineering subject in the branch in which he wishes a degree; the said thesis to be accompanied by all necessary descriptions, details, drawings, bills of quantities, specifications and estimates.

The candidates may be required at the option of the Examiners to undergo an examination in the subjects of this thesis.

6. Notice in writing shall be sent to the Secretary not later than the first day of February, informing him of the degree to which the candidate wishes to proceed and of the title of his proposed thesis for the approval of the Senate.
7. The evidence under clause 4, and the thesis, with accompanying papers, described in clause 5, shall be sent to the Secretary not later than the first day of April.
8. The candidate shall be required to present himself for examination in the month of April at such time as may be arranged by the Secretary.
9. The fee for any one of the said degrees shall be twenty dollars, and shall be paid to the Bursar not later than the first day of April.
10. The thesis, drawings, and other papers submitted under clause 7 shall become the property of the University.
11. Candidates who graduated from the School of Practical Science before June, 1895, shall not be required to hold the degree of Bachelor of Applied Science.

**Extract from the Ontario Act Respecting Land Surveyors and Survey
of Lands (R.S.O.).**

“26. Any person serving as an apprentice as hereinafter provided, may, with the permission of the Board of Examiners, attend the Ontario School of Practical Science, or any school, college or university, the course of study in which is, in the opinion of the Board, sufficiently similar to that in the Ontario School of Practical Science, for the purpose of taking any course of study which includes any subject required for the final examination for admission to practice as a land surveyor, but the total period of such apprenticeship and of such course of study shall not exceed the period of four years from the date of the articles of apprenticeship as above mentioned, and not less than three years of the said period of four years shall be passed in the actual service of a practising Ontario Land Surveyor.

* * * * *

“28. The privilege of a shortened term of apprenticeship shall also be accorded to any graduate of the Royal Military College at Kingston and of the Ontario School of Practical Science in civil engineering or in mining engineering, or of the McGill College, Montreal, in civil engineering or in mining engineering, and such person shall not be required to pass the preliminary examination hereinbefore required for admission to apprenticeship with a land surveyor, but shall only be required to serve under articles with a practising land surveyor duly filed as required by section 32 of this Act, during twelve successive months of

actual practice, after which, on complying with all the other requirements, he may undergo the examination prescribed by this Act.

"29. Such person at any time during his apprenticeship may, with the permission of the Board of Examiners, attend the Ontario School of Practical Science, or any school, college or university, the course of study in which is, in the opinion of the Board, sufficiently similar to that in the Ontario School of Practical Science, for the purpose of taking any course of study which includes any subject required for the final examination for admission to practice as a land surveyor, but the total period of such apprenticeship, and of such course of study, shall not exceed the period of two years from the date of the articles of apprenticeship as above mentioned, and not less than twelve months of the said period of two years shall be passed in the actual service of a practising Ontario Land Surveyor."

Extract from Act Respecting Manitoba Land Surveyors.

"28. (1) The privilege of a shortened term of apprenticeship shall be accorded to graduates of the Royal Military College of Canada and to graduates in civil engineering of the University of McGill College of Montreal, the School of Practical Science of Toronto, the School of Mining at Kingston, and graduates of Manitoba University who have taken first or second class honours in the special course in mathematics; and such graduates shall not be required to pass the preliminary examination hereinbefore prescribed for admission to apprenticeship with a land surveyor, but shall only be required to serve under articles with a practising land surveyor, duly filed as required by section 24 of this Act, during twelve successive months of actual practice, of which at least six months shall be actual practice in the field, after which, on complying with the other requirements of this Act, he may undergo the examination for commission to practice prescribed by this Act."

Extract from the Dominion Lands Act.

"Every graduate in surveying of the Royal Military College of Canada, and every person who has followed a regular course of study in all branches of education required by this Act for admission as a Dominion Land Surveyor, through the regular sessions, for at least two years in any college or university where a complete course of theoretical and practical instruction in surveying is organized, and who has thereupon received from such college or university a diploma as civil engineer, shall be exempt from serving three years as aforesaid, and shall be entitled to examination after one year's service under articles with a Dominion land surveyor, at least six months of which service has been in the field, on producing the affidavit required by the next preceding clause as to such service; but it shall rest with the Board to decide

whether the course of instruction in such college or university is that required by this clause."

The attention of the candidates for the Diploma of D.T.S. given by the Dominion Board of Examiners, is directed to the facilities afforded for preparation in the University.

Extract from the Ontario Architects' Act.

"Any student who has matriculated in Arts in any University in His Majesty's dominions, or in the Ontario School of Practical Science, shall not be required to pass the preliminary examinations.

"23. Any person who applies for admission to registration as an architect after the coming into force of this Act, shall be not less than twenty-one years of age, shall have served as a student not less than five years with a principal or principals entitled to register under this Act, or with any other principal or principals approved by the Council, and have passed such qualifying examinations as may be required by this Act.

"24. (3) Any person who has graduated from the Ontario School of Practical Science shall be required to serve only three years as a student, one of which three years may be served during the vacation of such school.

"(4) Upon and after the passing of this Act, students shall serve such term as is required to be served by the provisions of this Act, under indenture to be a registered architect, which indenture and any assignment thereof with affidavit of execution thereto attached shall be filed with the Registrar upon payment of such fees as the Council may by regulation direct.

OUTLINE OF FOURTH YEAR COURSES.

Fourth year students spend much the greater part of their time in laboratory investigations. The lectures are arranged to break as little as possible into the relatively long intervals desirable for performance of experimental work.

ASTRONOMY.

Lecture Course.

The lecture course in this subject comprises the theory and adjustment of the instruments used in connection with a geodetic survey; the methods of taking and reducing observations for time, longitude, latitude, and azimuth, with the precision required on such a survey; and other matters relating to these subjects.

GEODESY AND METROLOGY.

Lecture Course.

The lecture course includes a description of the methods of measuring base lines, and the angles of a triangulation; the geometry of the spheroid, with applications to geodetic problems; the computation of geodetic positions; the solution of large triangles on the earth's surface, and the adjustment of a triangulation; trigonometric and precise spirit levelling; the determination of the figure of the earth by arc measurements, and by the pendulum; the theory of map projections, etc.

ASTRONOMY, GEODESY AND METROLOGY.

Laboratory Courses.

The practical work in the above subjects includes the observation of meridian transits for time and longitude determinations, and of *prima vertical* transits for latitude, with the astronomical transit instrument; the observation of meridian zenith distances of stars, and of azimuths at elongation, for latitude, with the alt-azimuth; theodolite observations for azimuth; observations for latitude with the zenith telescope; the investigation of the constants of the instruments used, and the reduction of all observations; the measurement of a base line with the steel tape, and the determination of the constants of the tape; the measurement of the angles of a triangulation and the adjustment of the angles of a network of triangles, etc.

ARCHITECTURE.**Lecture Courses.****HISTORY OF ARCHITECTURE.**

This course of lectures is a continuation of the work in History of the previous three years. Special attention is paid to the Renaissance and Modern periods.

ADVANCED ARCHITECTURAL DESIGN.

This is largely practical work in the library and draughting room, with lectures and criticisms given at irregular periods as required.

BUILDING MATERIALS.

This course of lectures is designed to explain the nature, properties and aesthetic uses of the various building materials.

SPECIFICATIONS, ESTIMATES AND CONTRACTS.

Two hours per week during the session.

Laboratory Courses.

Work in the studio and certain test investigations on materials.

STRENGTH AND ELASTICITY OF MATERIALS.**Lecture Courses.****STRENGTH AND ELASTICITY OF MATERIALS.**

Most of the work taken up is in connection with structures in which the stresses are statically indeterminate.

Reference books:—Modern Framed Structures—Johnson; Roofs and Bridges, Part IV—Merriman & Jacoby.

STEEL AND IRON.

In this course of lectures are discussed the relations between composition of steels and irons and their physical properties. The effects of heat treatment on structure and the constitution and structure of iron and steel as revealed by the microscope are studied in class room and laboratory.

CEMENT AND CONCRETE.

Manufacture, testing and use of Portland cement; concrete and reinforced concrete; mathematical theory of reinforced concrete.

Reference books:—Reinforced Concrete—Buel & Hill; Concrete and Reinforced Concrete Construction—Reid.

Laboratory Courses.

This course of experiments is intended to give the student practice in investigating the elastic and other physical properties of irons, steels, timber, concrete and other building materials.

Reference book:—Materials of Construction—Johnson.

HYDRAULICS.**Lecture Courses.****HYDRAULICS.**

Following up the third year course in this subject the theory already acquired is applied to the solution of problems connected with branched pipes water mains discharging at various points along their length, the effect of a dam on the water level at any point on a stream and numerous other problems.

The most important question considered and to which most of the lectures are devoted is the theory of turbines and centrifugal pumps, the effect of the design on the speed, discharge, power and efficiency being fully taken up.

Text books:—Bodmer, Hydraulic Motors, etc.; Innes, Centrifugal Pumps; Merriman, Hydraulics.

Laboratory Courses.

The laboratory course in Hydraulics consists of experiments on the coefficients for various sizes and types of orifices, weirs and nozzles. Experiments are also made to determine the loss of head in pipes and elbows and the friction factor; pipes are also arranged for Pitot tube work. A complete series of tests is also run on various turbines and centrifugal pumps.

THERMODYNAMICS AND THEORY OF HEAT ENGINES.**Lecture Courses.****THERMODYNAMICS.**

The subject is here treated from a general standpoint and the ideas of entropy and of the absolute scale of temperatures are introduced. The course includes the treatment of saturated and superheated vapours, gases, the flow of fluids, chimney and boiler efficiency and the theory of various engines and other appliances including air compressors, refrigerating machines, injectors and the various forms of link motions and radial valve gears.

Text books:—Peabody, Thermodynamics; Peabody, Steam Tables.

Laboratory Course.

This course is designed to give the student practical applications of Thermodynamics. It consists of engine and boiler tests under different conditions and with both simple and compound engines, tests on an air compressor and on a gas and an air engine. Experiments are also made on injectors and calorimeters and a steam turbine and various other devices.

APPLIED ELECTRICITY.

Lecture Courses.

APPLIED ELECTRICITY.

This course deals by analytical and vector methods with the theory of alternating current circuits and machinery. Applications of theory are considered with regard to transformers, single and polyphase generators, synchronous motors and rotary converters, induction and commutating series motors, transmission lines taking account of distributed capacity and leakage, wave analysis, etc.

Text:—Alternating Currents—Franklin & Williamson.

Laboratory Course.

This laboratory course involves a thorough study of principles and properties of single and polyphase circuits and apparatus. Both vector and analytical methods are applied to the solution of problems based on tests made on laboratory machines.

The work deals mainly with constant voltage and constant current transformers single and polyphase alternators, synchronous motors, rotary converters, induction and single phase commutating motors, transmission line, etc. The work does not consist only of factory tests, but is designed to compel the application of theory to practice as illustrated in apparatus under test, with a view to exact understanding of methods of theory application and an appreciation of limitations under many conditions. Free use is made of the oscillograph as a necessary device for "seeing" conditions under investigation.

The best commercial measuring instruments are available to assist toward accurate work.

**INDUSTRIAL CHEMISTRY.
SANITARY AND FORENSIC CHEMISTRY.
INORGANIC AND ORGANIC CHEMISTRY.**

Lecture Courses.

The lectures treat of advanced theory and of such special subjects as laboratory methods, dye stuffs, stereo-chemistry, etc., which are deemed advisable.

Laboratory Courses.

The laboratory work embraces advanced work in Inorganic, Organic, Analytical, Sanitary and Forensic Chemistry. The particular work assigned to each student is determined by his special needs.

ELECTROCHEMISTRY.

Lecture Course.

In the Fourth Year Electrochemical course, more advanced lectures are given on the theory of solutions and electrolysis, and the application to the practice of electro-deposition and electrolytic refining of metals. The course also includes lectures on the electric furnace, with special consideration of the efficiency.

Text-books:—Borchers, Electrometallurgy; LeBlanc, Electrochemistry; Lupke, Electrochemistry.

Laboratory Course.

The laboratory course of the Fourth Year includes advanced physico-chemical measurements, and experiments with various types of electrolytic cells and electric furnaces.

MINERALOGY AND GEOLOGY.

Lecture Courses.

ADVANCED GEOLOGY.

- (A) Pre-Cambrian Geology.—An account of the Keewatin, Huronian and Laurentian rocks of Canada, with their distribution, structural relations and economic features, and briefer accounts of similar formations in the United States and elsewhere. Works of Reference, Reports of the United States and Canadian Geological Surveys, of the Bureau of Mines of Ontario, etc.

(B) Pleistocene Geology.—Lectures on the formation and distribution of the drift deposits of North America, with brief references to other regions. Glacial, Interglacial and Post Glacial beds are described, changes of climate are discussed with their probable causes, and the economic features of the clays, sands and gravels are pointed out. A weekly excursion is made during October and November to points of interest near Toronto, which is in the centre of the most important development of Pleistocene in America.

(C) Physiography.—A course of lectures on the surface forms of the earth, with the geological factors which have produced them. The broad features of the earth, its plains, tablelands, hills, valleys, mountains, oceans, rivers and lakes are discussed in a general way, methods of topographical surveys and mapping are referred to, and the chief physiographic areas of Canada are described.

MINING GEOLOGY.—A course of lectures on geological problems associated with mining, typical mining regions in Canada, the United States and elsewhere being discussed from the geological side. Works of reference, the Mineral Industry and the books mentioned under 9.

PALAEONTOLOGY.

Introductory course of lectures and laboratory work.

Reference book:—Eastman's, Zittel's Text-book of Palæontology.

PETROGRAPHY.

The work of course in Mining Geology is reviewed and extended.

During the first term the time is largely devoted to microscopic study of the chief rock forming minerals.

Laboratory Courses.

PRACTICAL PETROGRAPHY.

This course comprises macroscopic and microscopic studies of the chief rock types. Students prepare and examine thin sections of rocks. This work is carried on in the laboratories and museum of the department. Test examinations are given periodically.

Text books:—Kemp, Hand-book of Rocks; Luquer, Minerals in Rock Sections.

DETERMINATIVE MINERALOGY.

The time is devoted to the identification of minerals by physical properties, heavy solutions, the microscope and the geniometer. A brief course of microchemical exercises is included.

METALLURGY AND ASSAYING.**Lecture Course.**

A short course of lectures on metallurgical subjects will be given in connection with the practical work during the second term.

Laboratory Course.

This work consists in milling and concentrating ores of different kinds, also amalgamation of gold ores. From the nature of the work, as most of it requires continuous unbroken periods of time in order to operate satisfactorily, no time table can be adhered to, in certain weeks several whole days being devoted to a test.

Laboratory work which can be carried out in shorter periods is set down for a certain afternoon in the week.

The mechanical concentration is all done in the separate milling building and the metallurgical work in the assay and metallurgical laboratories. The total time devoted to this work throughout the year is about 150 hours.

In addition to this class of work each student is required to select a thesis which requires practical work, this might fall in the milling, metallurgical, chemical or mineralogical laboratories according to the choice and taste of the student.

LABORATORY EQUIPMENTS.

THERMODYNAMIC LABORATORY.

The thermodynamic laboratory contains a 50 horse power Brown engine. The engine was constructed especially for experimental investigations, and the cylinder has steam jackets on the body and both ends arranged so that any or all of them may be used at once, or that all may be shut off as desired. The exhaust steam may be passed through a feed-water heater to the open air, or to a jet condenser or to a Wheeler surface condenser, the latter of which was kindly presented to the School by the inventor, Mr. F. M. Wheeler, of New York.

A compound Willans engine has been installed as a part of this laboratory. This engine is so arranged that it may be run condensing or non-condensing and it may also be converted into a simple engine if desired, thus allowing considerable latitude in the way of experimental work.

There is in addition a De Laval steam turbine arranged for running, condensing or non-condensing, suitable nozzles being provided for either purpose.

The laboratory also contains a compound, steam driven, two-stage, air compressor, delivering air at 100 lbs. pressure. The low pressure air cylinder is fitted with Corliss inlet valves and both cylinders have Meyer valves with adjustable hand wheel outside the steam chests. A brake wheel on the engine permits of its use as an ordinary compound steam engine.

There are also a Blake circulating pump, a Knowles air pump, and a Blake feed pump, the latter a gift of the manufacturers. Several injectors of various types are also available for experimental work and examination.

The steam for the plant is supplied by a Babcock & Wilcox boiler, and a Harrison-Wharton boiler.

For the work on internal combustion engines an engine of 10 horse power working on the Otto cycle is available. This engine is adapted for the use of gas or oil and has several independent methods of ignition. It is also so constructed that the effect of varying the compression pressure may be readily investigated.

An Ericsson air engine completes the experimental equipment of this laboratory. There are, in addition, the usual measuring instruments required in thermodynamic investigations, among which may be mentioned indicators of various types, gauges, gauge testing apparatus, calorimeters, both throttling and separating, scales, brakes, dynamometers, anemometers, thermometers, a platinum and platino-rhodium thermo-couple, and other instruments.

HYDRAULIC LABORATORY.

This laboratory contains three large steel tanks arranged for the experimental study of the flow of water through orifices and over weirs. Both orifices and weirs may be conveniently changed.

The discharge is measured by two tanks which are filled and emptied alternately by means of four valves operated by a single lever, thus enabling the measuring to be continued for any length of time without interrupting the flow.

The water is supplied by a centrifugal pump of latest design and construction. This pump is so designed that it will give a discharge of 1,000,000 gallons per 24 hours, or it may be arranged to give half the discharge against double the head. In addition to being useful as a pump to supply water for the hydraulic work it forms an excellent piece of laboratory equipment and is so arranged that experiments may be made on it as to discharge and efficiency under varying conditions of speed and head.

For the work on turbines, etc., a six-inch New American turbine, the gift of the firm of William Kennedy & Sons, Owen Sound, has been set up so that efficiency determinations under different gate openings and heads may be made. In addition to this a thirty-six inch axial impulse turbine, and a Pelton wheel, each being provided with suitable brakes, means of accurately measuring the discharge continuously, and other requirements for experimental work have been installed. A small Doble wheel and a nine-inch McCormick turbine have also been added to the laboratory. There are two centrifugal pumps, one of which was kindly presented to the laboratory by the Northey Co., Limited, Toronto, the manufacturers, and the other was specially designed and built for a more careful line of experimental work than is possible with the ordinary commercial pump of this class. A dynamometer and other necessary apparatus are provided for adopting these pumps to scientific investigations.

A Venturi meter has also been installed, and apparatus has been arranged so that the discharge from different forms of nozzles, and the frictional losses in elbows, valves, etc., may be determined.

Pipes have also been arranged so that the loss due to friction in iron pipes and fire hose may be determined, and the conditions of flow examined by means of the Pitot tube.

A hydraulic ram with $1\frac{1}{4}$ inch drive pipe properly set up for investigation completes the equipment.

There are the usual measuring instruments, gauges, gauge-testing apparatus, scales, brakes and dynamometers.

PHYSICAL LABORATORIES.

The optical laboratory is equipped with Weinhold optical benches and accessories for determining the constants of mirrors and lenses and for demonstrating the construction and use of telescopes, mirrors, field glasses, microscopes, etc. There is also a full equipment of optical instruments including telescopes, microscopes, field glasses, comparators, spectrometers, saccharimeters, level tester, photometer, focometer, dynameter, cathetometer, polariscope, projecting lanterns, etc.

The photographic laboratory is supplied with several cameras for viewing, copying, enlargement and reduction, a spectroscopic camera and an electric blue printing machine and the necessary dark rooms.

The Hydrostatic laboratory contains a supply of various forms of hydrometers, hydrostatic balances, Jolly balance, Mohr's balance, hydrostatic press, vacuum pumps, gauges, etc.

The Heat laboratory is equipped with a full supply of calorimeters and accessories for determinations of latent and specific heat. There is also a steam boiler and jacketed tubes for determinations of the expansion of metal rods, air thermometer, apparatus for verification of Boyle's law and pressure and boiling point curve and for determination of the absolute expansion of mercury, Nichol's modification of Rowland's calorimeter for determination of Mechanical Equivalent of Heat, the work being supplied by an electric motor.

The Acoustical laboratory is provided with sonometer, siren, forks ordinary and electric, Lissajous' and Melde's apparatus, organ pipes of various forms, manometric flame apparatus and a special equipment for work in architectural acoustics consisting of torsion chronograph, electro-pneumatic wind chest and standardized organ pipes and other accessories.

STRENGTH OF MATERIALS LABORATORY.

This laboratory is intended for the scientific and commercial testing of the materials of construction such as iron, steel, timber, concrete and masonry.

It is supplied with the following:—

An Emery 50-ton hydraulic machine, built by Wm. Sellers & Co., of Philadelphia, for making tests in tension and compression.

A 100-ton screw power machine, built by Riehle Bros., Philadelphia. It is designed for making tests in tension, compression, shearing and cross-breaking and will take in posts 12 feet long and beams up to 18 feet in length.

A Riehle 10-ton screw power universal testing machine.

A Riehle 50-ton screw power universal testing machine.

A 15-ton single-lever machine, built by J. Buckton & Co., Leeds, England.

A torsion machine, built by Tinius Olsen & Co., Philadelphia, for testing the strength and elasticity of shafting. This machine will twist shafts up to 16 feet in length and 2 inch in diameter.

A Riehle transverse testing machine of 5,000 pounds capacity, adapted to specimens up to 48 inch in length.

A Riehle compressometer, with spherical seat attachment for the adjustment of specimens having slightly non-parallel faces. This compressometer will receive specimens up to 10 inch in length.

A large number of extensometers of the usual degree of precision. These include the Bauschinger, Unwin, Marshall, Riehle, Johnson, Henning (recording) and other types. In addition there are the usual scales, micrometers, telescopes and reflectors, voltmeters for the determination of metallic contact, and such other appliances as are necessary in the making of precise measurements.

The shop is equipped with a number of high-class machine tools specially fitted for reducing the specimens to the requisite shapes and dimensions with a minimum of hand labour. It is also supplied with the necessary appliances for making ordinary repairs and for making apparatus for special experiment and original investigation.

CEMENT TESTING LABORATORY.

This laboratory is fitted with all the ordinary moulds, sieves, balances, burettes, steaming and drying tanks, tables and other appliances necessary in making the usual physical tests of a Portland cement. In addition there are also the following:—

A Riehle 2,000 lb. machine, fitted for either tension or compression.

A 2,000 lb. Fairbank's shot machine for tension.

An extra large Faija's hot bath apparatus.

METROLOGICAL LABORATORY.

The department of surveying and geodesy is provided with all the ordinary field instruments, such as transits, levels, compasses, micrometers, sextants, planimeters, plane tables, tapes, chains, etc., with which is carried on the instruction in practical field operations as detailed elsewhere.

A small laboratory is also established containing the necessary instruments for the refined measurements of geodetic surveying; as, a standard yard and metre, a Rogers 10 foot comparator, a Kater's pendulum with vacuum chamber, a level trier, micrometer, microscopes, etc.

There is also a geodetic observatory in connection with this department in which students of the fourth year are instructed in, taking observations for time, latitude, longitude, and azimuth by the precise

methods used in connection with a geodetic survey. It contains a 10 inch theodolite and a zenith telescope by Troughton & Simms; an astronomical transit instrument and an 8 inch theodolite by Cooke; an electro-chronograph; a Howard astronomical clock; a Dent sidereal break-circuit chronometer; arithmometers, etc.

ELECTRICAL LABORATORIES.

Galvanometer laboratories:—Two laboratories are equipped with numerous galvanometers, resistance boxes, bridges, potentiometers, standard resistances, standard cells, etc., and much other usual and special apparatus for varied electrical experiments of the more delicate variety.

A third laboratory is fitted more especially for calibration of electrical instruments for alternating and direct currents. Some ninety portable measuring instruments are available for students' use, also standard instruments, including Weston laboratory standards, Kelvin balances, etc., with which the portable instruments may be compared.

Photometric Laboratory:—This laboratory contains apparatus for studying the various types of arc and incandescent lamps.

Direct Current Machine Laboratory:—This laboratory contains fourteen dynamos and motors varying in capacity from two to twelve kilowatts, adapted for experiments illustrating the properties of compound, shunt and series dynamos and motors, arc machines, etc. Switchboards, numerous rheostats, lamp racks, starting boxes, circuit breakers, flexible cables, brakes, torsion dynamometers, tachometers, etc., are available for use with the machines. The students are supplied with the best standard portable ammeters and voltmeters obtainable.

Alternating Current Machine Laboratory:—This laboratory contains one 15 kw., 25 cycle and two special 15 kw., 60 cycle General Electric polyphase revolving field alternators direct driven by Westinghouse and Edison motors, two rotary converters of 10 kw. and 5 kw. capacity, a $7\frac{1}{2}$ kw. General Electric polyphase induction motor with slip ring rotor, Westinghouse three phase squirrel cage induction motors, Wagner single phase motor, Westinghouse single phase series motor, Westinghouse alternator, and several three phase induction motors; also transformers, reactive coils, lamp racks, rheostats, circuit breakers, flexible cables, brakes and other details for experiments on the properties of alternating currents and alternating current apparatus in general. A constant-current transformer with full load of series arc lamps, three oscillographs for studying wave forms, a high potential transformer and a mercury arc rectifier may also be mentioned. The students are supplied with Weston, Westinghouse and Thomson portable instruments for measuring purposes.

CHEMICAL LABORATORIES.

The Chemical laboratories are situated in the western half of the new Chemistry and Mining building, on the first and second floors. The rooms are large and well lighted, and are supplied with the usual modern equipment.

The first and second year laboratory for qualitative work has accommodation for 112 students, each working space being supplied with water, gas and fume cupboard. The third and fourth year laboratory for quantitative analysis will accommodate 36 students, and is supplied with commodious fume cupboards and all necessary apparatus. A laboratory with working places for 24 is provided for the students engaged in the study of technical chemistry; it is equipped with appliances for the preparation and testing of chemical products. Each of these laboratories has its own balance room adjoining, furnished with instruments from the best makers and adapted to the particular objects in view.

In addition there are rooms set apart for gas analysis, electrolytic analysis, calorimetry, and a specially constructed fireproof laboratory for combustion, crucible and bomb furnaces. Each of these laboratories is supplied with apparatus of the most approved design, providing excellent facilities for the prosecution of work in analytical and technical chemistry.

ELECTROCHEMICAL LABORATORIES.

The Electrochemical laboratories which are situated in the Chemistry and Mining building are provided with special facilities for electrolytic work, including a large storage battery and electroplating dynamo with tanks as well as a complete set of apparatus and electrical measuring instruments. The experimental work on electric furnaces is performed in two rooms specially equipped for this purpose with rheostats and switchboard connections to a 120 k.w. D.C. generator, which supplies the current required.

GEOLOGICAL AND MINERALOGICAL LABORATORIES.

By the erection of a new Chemistry and Mineralogy building on College Street the University has secured for the first time really modern laboratory equipment for the departments of Geology and Mineralogy.

For students of science generally brief courses are given in laboratory work, especially in personal examination of type sets of rocks, fossils, minerals and crystal models. These laboratory exercises serve to illustrate the introductory didactic instruction.

For the encouragement of pure crystallography the laboratories are supplied with goniometers of the various types, crystal models, appliances for the cutting of oriental crystal sections and for the physical examination of the same. Practical Petrography is carried on in rooms provided with type sets of rocks, both macroscopic and microscopic. Advanced students are taught to make thin sections of rocks and fossils and to study them microscopically. Students in Palæontology are given instruction in the preparation of material for study and are afforded an opportunity of examining type series of specimens.

The laboratory for the preparation of thin sections of rocks, minerals and fossils is provided with electric diamond saws and grinding appliances for the various types of work incidental to the preparation of thin sections and museum material.

A room is also provided for advanced work in Cartography and Geological Surveying.

The departments possess 28 petrological microscopes and five of other types so that it is now possible to provide advanced students with instruments and sets of thin sections for their own especial use. The blowpipe laboratory contains 156 lockers, especially designed for apparatus for students.

ASSAYING LABORATORIES.

Two assaying laboratories are situated in the basement of the Chemistry and Mining building, one has a floor space of 17 feet x 47 feet, and the other 28 feet x 37 feet, adjoining each is a room 15 feet x 11 feet, with the necessary equipment for the wet work in connection with assaying. Common to both laboratories is a balance room furnished with gold balances set on a concrete pier. Each of the laboratories contains a number of melting holes (13 in all) for crucible fusions, various gas furnaces both for crucibles and muffles, and a large brick muffle furnace.

The furniture comprises lockers for the students, tables for the pulp balances and the necessary cabinets and shelving.

Adjoining the assay laboratories is a preparation room (19 feet x 13 feet) which is equipped with a motor, crusher, pulverizer, sample grinder and all the necessary hand pulverizers, screens, etc., for preparing ores for assay.

The metallurgical room is 40 feet x 21 feet and is equipped at present with a reverberatory furnace for roasting sulphide and arsenical ores, fume cupboard, lockers, tables, etc., and is intended for hydro-metallurgical work.

MILLING AND CONCENTRATING PLANT.

A detached building 72 feet x 70 feet in area, contains the milling and concentrating equipment. It is heated, lighted and supplied with power from the main building, and is divided into two parts. The greater part, with 72 feet x 53 feet floor space, and 22 feet high, contains the milling and concentrating equipment. The machinery for the former operations consists of a five-stamp battery erected on concrete foundation, Challenge ore feeder, amalgamating plates, Wilfley table for concentration, a clean up pan, steel settling tanks, a steel tank suspended from the roof girders to furnish a constant supply of water, and a track with travelling crawl to transport ore. This is driven by a 15 horse power motor.

The concentrating part consists of a set of five revolving trommels for wet screening, four three-compartment jigs, a trough classifier delivering three products, and two revolving buddles. The waste products run to the same settling tanks as the tailings from the stamp battery. The ore is handled by a travelling crawl. All the machinery in this part is driven by a 10 horse power motor.

The plant throughout is intended mainly for experimental purposes and is made of such a size that numerous experiments can be carried out on small quantities of ore.

Tests can also be made on lots of one or two tons.

The other part of the milling building, with 72 feet x 17 feet floor space and 15 feet high, is divided into four separate rooms. The largest of the four rooms has an area of 476 square feet and is devoted to the crushing and pulverizing of the ores preparatory to their treatment in the milling and concentrating room. It is isolated in order to confine the dusty operations as far as possible to this one room, and is equipped with a gyrating crusher of Hadfield's make, a set of Hamilton rolls 16 inches by 12 inches, platform scales for weighing ore, a jib crane, pulleys, buckets, etc., for handling the rock. An adjoining room contains a 30 h.p. motor for driving the machinery of the crushing department, and storage bins for ore, work bench, etc. Another room with 17 feet x 15 feet floor space, is furnished with a magnetic separator of the Rowan-Wetherill make, driven by its own motor.

One room of the same size as the above remains available for future additions.

MUSEUM.

The Geological and Mineralogical Museum of the University is open to students of the Faculty of Applied Science, and is also accessible to the general public from 2 to 5 p.m. throughout the academic year.

The Museum is situated in the south-east corner of the ground floor of the Chemistry and Mining building, and may be entered from the door at that corner of the building.

The southern half of the room is occupied by the cases of the palæontological collection in which are arranged a large series of fossils. These specimens are placed so as to display together the great groups of animals, while the minor divisions are based on stratigraphical grounds. Particularly worthy of note are the fine series of Crinoids and Cystids and the type specimens of Eastern Canada Cambrian fossils. A large part of this collection is due to the generosity of Dr. B. E. Walker and Mr. Wm. Mackenzie. On the walls of the museum are being placed some excellent specimens of large extinct vertebrates.

To the north of the fossil collection is the Ferrier Cabinet of Minerals containing good examples of nearly all the minerals known to science, as well as a special case with specimens of the various minerals from the Cobalt Mining District.

The northern part of the room is occupied by twenty cases exhibiting all the important rocks both igneous and sedimentary which go to make up the crust of the earth.

Around the walls are placed cases containing the chief economic mineral products arranged in accordance with their practical application to human activities. This collection is particularly rich in specimens from Ontario localities and includes most of the material formerly exhibited in the Engineering building.

LIBRARY.

Rooms have been set apart in the Engineering and the Chemistry and Mining Buildings for the housing of such periodical and other literature of the University Library as is of special interest to the students of this faculty.

SOCIETIES.

THE ENGINEERING SOCIETY OF THE UNIVERSITY OF TORONTO.

Officers for 1908-1909.

<i>President</i>	R. J. Marshall.
<i>Vice-Presidents.</i>	W. J. Bolton.
	L. R. Wilson.
	A. D. Campbell.
<i>Recording Secretary</i>	F. D. Clark.
<i>Corresponding Secretary</i>	F. A. Robertson.
<i>Treasurer.</i>	F. H. Chesnut.
<i>Permanent Secretary.</i>	K. A. McKenzie, B.A.Sc.
<i>Librarian.</i>	W. J. Amsden.
<i>Fourth Year Representative.</i>	J. P. Charlebois.
<i>Graduates' Representative</i>	T. H. Hogg.
<i>Third Year Representative.</i>	T. H. Crosby.
<i>Second Year Representative</i>	R. H. New.
<i>First Year Representative.</i>	To be elected.

The Society meets every second Wednesday during the academic year. Papers are read, and discussions are held on engineering subjects. The Society publishes a pamphlet monthly during academic year, containing the best papers read at the meetings. A supply department is run by the Society, through which all necessary instruments, etc., for drafting may be purchased.

ATHLETIC ASSOCIATION OF THE FACULTY OF APPLIED SCIENCE.

EXECUTIVE COMMITTEE, 1907-1908.

<i>Honorary President</i>	Principal Galbraith.
<i>President</i>	J. Van Nostrand.
<i>Vice-President.</i>	R. G. L. Harstone.
<i>Secretary-Treasurer</i>	R. M. Harcourt.
<i>Fourth Year Representative.</i>	C. S. Grasett.
<i>Third Year Representative.</i>	M. Pequegnat.
<i>Second Year Representative.</i>	G. Hoshal.
<i>First Year Representative.</i>	H. Gall.

The Athletic Association has full control over all athletic clubs using the name of the Faculty of Applied Science. The Executive Committee has power to suspend any one from the privileges of membership in the Association for any breach of its regulations, and controls the finances of all athletic clubs in the aforesaid Faculty. The annual membership fee of this Association is fifty cents.

No other moneys are collected for the support of athletics in the Faculty of Applied Science without the sanction of the Executive Committee.

RUGBY FOOTBALL.

The Mulock Cup, which was presented by Hon. Wm. Mulock, M.A., LL.D., to the University of Toronto Rugby Football Club for inter-college competition, brings out each year a large number of contestants from the University and affiliated colleges.

RUGBY FOOTBALL CLUB OF THE FACULTY OF APPLIED SCIENCE.

(Winners of Mulock Cup.)

Officers.

<i>Honorary President</i>	Principal Galbraith.
<i>President</i>	E. G. Hewson.
<i>Secretary-Treasurer</i>	E. S. G. Strathy.
<i>Manager senior team</i>	G. G. Mills.
<i>Captain senior team</i>	C. E. Webb.
<i>Manager intermediate team</i>	J. Van Nostrand.
<i>Captain intermediate team</i>	A. S. McArthur.
<i>Manager junior team</i>	J. I. McSloy.
<i>Captain junior team</i>	A. E. Allison.

ASSOCIATION FOOTBALL.

In order to encourage Association Football on the College campus, the Faculty of the University of Toronto presented a cup, known as the Faculty Cup, to the Inter-College Association Football Club for annual competition among University and affiliated colleges.

ASSOCIATION FOOTBALL CLUB OF THE FACULTY OF APPLIED SCIENCE.

Officers.

<i>Honorary President</i>	Prof. C. H. C. Wright.
<i>President</i>	W. C. Blackwood.
<i>Manager of seniors</i>	H. F. Shearer.
<i>Manager of juniors</i>	W. S. Jardine.
<i>Captain of seniors</i>	A. D. Campbell.
<i>Captain of juniors</i>	W. L. Stamford.

HOCKEY.

The trophy which is competed for annually among the Colleges in hockey is known as the Jennings Cup, and is the gift of the late W. T. Jennings, Mem., Inst. C. E.

HOCKEY CLUB OF THE FACULTY OF APPLIED SCIENCE.

Officers.

<i>Honorary President</i>	Professor Ellis.
<i>President</i>	C. T. Hamilton.
<i>Vice-President.</i>	B. Neilly.
<i>Secretary-Treasurer</i>	G. C. Cowper.
<i>Manager of senior team</i>	E. G. Hewson.
<i>Manager of junior team</i>	W. J. Johnson.

TRACK CLUB.

Officers, 1907-1908.

<i>Honorary President</i>	Principal Galbraith.
<i>President</i>	V. A. E. Goad.
<i>Vice-President.</i>	G. Woodley.
<i>Secretary-Treasurer</i>	L. A. Wright.
<i>Fourth Year Representative</i>	P. R. Brecken.
<i>Third Year Representative</i>	E. E. Webb.
<i>Second Year Representative</i>	R. B. Jennings.
<i>First Year Representative</i>	To be elected.

OFFICERS OF THE 2nd FIELD COMPANY CANADIAN ENGINEERS.

<i>Major Commanding</i>	W. R. Lang.
<i>Lieut. (Acting Adj.)</i>	H. N. Gzowski.
<i>Lieutenant</i>	S. P. Biggs.
<i>Lieutenant</i>	C. S. L. Hertzberg.
<i>Lieutenant</i>	Emile von der Osten.
<i>Lieutenant</i>	H. F. H. Hertzberg.
<i>Company Sergt.-Major.</i>	J. J. O'Sullivan.

UNIVERSITY OF TORONTO ATHLETIC ASSOCIATION.

Directorate.

<i>Honorary President</i>	R. A. Falconer, D. Litt., LLD.
<i>President</i>	Rev. D. Bruce Macdon- ald, M.A., LLD.
<i>Vice-President.</i>	W. W. Lailey, B.A.
<i>Secretary-Treasurer</i>	Jas. W. Barton, M.D.

Directors.

Prof. A. T. DeLury.	C. G. Toms.
Prof. McCurdy.	R. A. Laidlaw.
W. Martin.	M. D. Kennedy.

The Athletic Association is now the paramount body in University athletics, and has entire jurisdiction over the athletic clubs using the University name, and over their finances, members, and policy, subject to the University authorities. Henceforth no financial agreement can be entered into by any such club without the sanction of the Directorate. No expenditure of any kind in connection with any such club can be made without the written order of the Secretary-Treasurer of the Directorate.

GYMNASIUM AND ATHLETIC GROUNDS.

"The University gymnasium was completed and equipped in 1893. It is fully provided with the best and most modern appliances for physical culture, and contains a running track, shower baths and swimming bath, besides the necessary dressing rooms and other conveniences. A competent instructor in gymnastics is in constant attendance to superintend and direct the exercises of students. In addition to the lawn in front of the Main University Building and a campus in the rear, a large plot of ground on Devonshire Place has been set apart as an athletic field. By this addition the facilities for football, cricket, tennis and other out-door athletic sports are doubled, as compared with previous accommodation; and by these grounds, in conjunction with the gymnasium, ample opportunity is afforded to all students for healthful exercise and physical development. To assist in meeting the expenses of the gymnasium, a nominal annual fee is imposed on those who avail themselves of its advantages. The supervision of all athletic matters has been entrusted by the Council to an Athletic Board, consisting of six members appointed from the Faculty and officers of the Athletic Association. All applications of clubs for the use of grounds must be made annually to this Board. All such applications must be accompanied by a list of officers. In the case of new clubs the list of officers must be accompanied by particulars as to the organization and objects of the club making application."

STUDENTS' UNION BUILDING.

"In 1894 additions were made to the front of the building in which the gymnasium is situated, consisting of a large hall for public meetings, a reading room and committee rooms. This additional accommodation is available for the work of the various students societies, and for academic purposes. Applications for the use of rooms, accompanied by a list of officers and a copy of the constitution of the society making application, must be made, through the President, to the joint committee of the Councils on Gymnasium and Students' Union Building, at the beginning of the season, or from time to time as occasion requires.

Arrangements have also been made by which recognized societies may obtain the use of committee rooms on application to the janitor of the Students' Union Building."

**FACULTY OF APPLIED SCIENCE.
YOUNG MEN'S CHRISTIAN ASSOCIATION.**

The Y.M.C.A. of the Faculty of Applied Science was organized January 27th, 1905, and forms an integral part of the University of Toronto Y.M.C.A., which is a federation of the Associations of the various Colleges and Faculties of the University. The object of the Association is to develop a true Christian manhood and to help the students in whatever way possible.

<i>Honorary President</i>	Prof. R. W. Angus.
<i>President</i>	F. C. White.
<i>Vice-President</i>	R. W. E. Loucks.
<i>Treasurer</i>	F. A. Dallyn.
<i>Recording-Secretary</i>	T. A. McElhanney.

STUDENTS IN ATTENDANCE.

SESSION 1907-1908.

First Year.

REGULAR STUDENTS.

2 Adams, J. H.....	Toronto	5 Conway, M. E.....	Ottawa
1 Alison, A. E.....	Toronto	1 Cooke, H. H.....	Toronto
2 Allen, E. R.....	Toronto	1 Cornell, C. W.....	Toronto
3 Amsden, W. G.....	Toronto	4 Craig, J. H.....	Toronto
1 Anderson, A. L.....	Guelph	3 Cruthers, W. M.....	Oakville
3 Archer, E. G.....	Petrolia	3 Cummiford, S. A....	Strathroy
1 Baird, W.	Scarboro	3 Cunerty, T. J.....	Toronto
1 Barry, M. J....	Westmount, Que.	2 Curtis, W. A.....	Tillsonburg
6 Beith, J. D.....	Bowmanville	1 Curzon, J. H.....	Toronto
3 Bell, R. S.....	Toronto	1 Davis, W. B.....	Ivy
1 Berry, E. W.....	Seaforth	3 Dean, C. D.....	Toronto
1 Bingham, H. C.....	Clifford	3 Dissette, A. C.....	Toronto
2 Bissett, D. G..	Strathcona, Alta.	3 Dobbin, R. L.....	Peterboro
1 Blackwell, R. H. H...	Peterboro	3 Dobson, W. P.....	Fordwich
3 Bonyun, W. A.		3 Duncan, J. M.....	Toronto
	San Fernando, B.W.I.	1 Duncanson, A. E.....	Toronto
3 Boswell, W. O.....	Toronto	1 Eadie, L.	Toronto Jct.
1 Brass, C. G.....	Toronto	3 Eccles, J. S.....	Toronto
1 Brickenden, F. M.....	London	1 Elliott, G. R.....	Goderich
2 Brock, A. F.....	St. Williams	1 Elliott, C. F.....	Toronto
3 Brown, R. M.....	Toronto Jct.	1 Emery, V. H.....	Aldershot
3 Browne, M. O.....	Toronto	3 Evans, W. J.....	Jermyn
3 Burgess, J. R.....	Havelock	3 Fairlie, H. W.....	St. Davids
3 Cale, W. C.....	Toronto	3 Faris, R. J.....	Bradford
3 Calvert, D. G.....	Strathroy	3 Farquharson, W....	Walkerton
1 Cameron, K. M....	St. Thomas	3 Farrell, K. A.....	Toronto
4 Campbell, K. M.		1 Ferguson, L. L.....	Aurora
	Fredericton, N.B.	3 Ferguson, C. R.....	Brampton
3 Caudwell, N. S.....	Brantford	3 Ferguson, J. W.....	Brampton
2 Cawley, H. E.....	Brockville	3 Finlayson, E. H.....	Toronto
1 Champion, I. W....	Brantford	3 Fletcher, A. W.....	Thornton
3 Chase, W. E.....	Toronto	1 Fletcher, J. A.....	Fletcher
1 Cherry, P. G.....	Toronto	3 Flint, T. R. C.....	Toronto
3 Chesnut, A. W.....	Toronto	3 Follett, R.	Toronto
1 Chisholm, D. C....	Mather, Man.	4 Forsyth, O. R.....	Berlin
1 Clark, F. W.....	Toronto	1 Fortier, L. H.....	Toronto
1 Clark, H. S....	Port Dalhousie	3 Foulds, W. C.....	Toronto
1 Clark, W. G.....	Owen Sound	2 Fredin, J.	Crumlin
1 Claveau, J. A..	Chicoutimi, Que.	1 Freeland, E. E.....	Toronto
3 Cleary, F. S.....	Windsor	1 Freeman, J. R.....	Brighton
3 Cockburn, L. S.....	Toronto	1 Fyfe, H. D.....	Toronto
3 Code, A. G.....	Perth	3 Gall, H.	Toronto
3 Cole, C. R.....	Woodstock	5 Geldzaeler, B.	Toronto
1 Colquhoun, G. A.		2 Gibson, C. A.....	Gananoque
	Vankleek Hill	1 Gibson, E. P.....	Willowdale

First Year—*Continued.*

1 Gibson, J. M.....	Arthur	1 Macdonald, A. G....	Dawson, Y.T.
1 Gibson, M. M.....	Willowdale	1 Macdonald, J. A....	Ridgetown
1 Goad, J. L.....	Toronto	1 Macdougall, R. H.	Fenelon Falls
2 Godson, H. P.....	Toronto	2 MacKay, E. G.....	Hamilton
3 Goodeve, V. S.....	Toronto	3. MacKenzie, W. S....	Woodstock
1 Goodridge, H....	Edmonton, Alta.	2 MacLeod, D. D.....	Parkhill
1 Gordon, W. A.....	Wallaceburg	1 MacLennan, G. G....	Hoath Head
3 Gorrie, D. A.....	Toronto	3 MacMurchy, H. G....	Toronto
3 Graham, E. B.....	Brampton	3 MacTavish, H. J....	Toronto
1 Grayson, W. M.		3 MacTeeter, W.	Teeterville
	Moose Jaw, Sask.	4 McBride, T. C.....	London
1 Greene, R. L.....	Toronto	1 McCarthy, T. V....	Pembroke
2 Griffith, T. G.....	Toronto	3 McCool, A. J.....	Ottawa
2 Gzowski, J. S.....	Toronto	3 McDonald, G. E....	Cornwall
3 Hadeock, J. P.....	Orangeville	1 McEachren, F. Y. P...	Toronto
1 Hall, H.	Toronto	3 McElroy, R. W.....	Toronto
3 Hall, R. S.....	Toronto	1 McFadyen, A. J.....	Bolsover
1 Hamilton, J. R....	Winnipeg, Man.	1 McGarry, P. J.....	Merrittton
1 Hanna, A.	Midland	3 McKim, L. R.....	Wyecombe
5 Harris, J. H.....	Toronto	3 McKirdy, W. S.....	Nepigon
1 Harris, R. W.....	Toronto	1 McLean, D. B.....	Paisley
3 Hart, R. R.....	Toronto	3 McLeish, A. G.....	Sable
1 Harvie, N. J.....	Orillia	1 McNiven, J.	Putnam
1 Henderson, J. F....	Toronto	2 McPherson, W. B....	Toronto
1 Henderson, E. M....	Marshville	3 McQueen, A. A.....	Toronto
1 Hicks, N. W.....	Humber Bay	2 McSloy, H.	Springford
1 Hoover, O. H.....	Port Perry	3 McSloy, J. I.....	St. Catharines
1 Hopkins, P. E.....	Kinmount	1 McVean, R.	Dresden
3 Hopper, C. E....	Richmond Hill	3 Macauley, R. V.....	Toronto
1 Hyland, R. T.....	Toronto	1 Marr, N.	London
3 Irwin, W. J.....	Belfast	3 Martin, W. H.....	St. Thomas
2 James, F. S.....	Tillsonburg	1 Meader, J. C.....	Toronto
3 Janney, W. E.....	Galt	3 Merriman, H. O....	Hamilton
1 Jennings, R. B....	Toronto Jet.	1 Milligan, F. S.....	London
1 Johnston, R. H.....	Toronto	1 Misner, C. E....	Sault Ste. Marie
1 Keith, J. C.....	Smith's Falls	5 Mitchell, L. C.....	Meaford
1 Kelly, E. A....	Winnipeg, Man.	3 Morgan, J. P.....	Newmarket
2 King, J. T.....	Cooksville	1 Mortimer, F. R.....	Arva
3 Kingston, G. A.....	Toronto	3 Munson, A. H.....	Hamilton
2 Kirwan, G. S.....	Ottawa	4 Murchey, H. C.....	Toronto
3 Kirwan, P. T.....	Ottawa	3 New, R. H.....	Toronto
3 Lawler, E. R.....	Toronto	1 Newhall, V. A....	Toledo, Ohio
1 Lawless, N.	Toronto	2 Newton, K. L.....	Durham
3 Leadman, H. L.....	Medina	1 Nichol, F. T.....	Beeton
3 Leaver, C. B.....	Toronto	1 Nickle, W. R.....	London
3 Lee, R. G.....	Toronto	5 O'Brian, K. B.....	Toronto
1 Leitch, J. N.....	Toronto	1 Oke, W. V.....	Toronto
3 Lethbridge, W. R....	Boxall	3 O'Keefe, H. J.....	Chatham
3 Lillie, G. L.....	Oakville	3 Palmer, C. E....	Richmond Hill
1 Longstaff, J. C....	Toronto	3 Parker, G. C.....	Toronto
3 MacColl, E. B.....	Glencoe	1 Paul, R. A.....	Listowel
3 Macdonald, A. D....	Sudbury	3 Pearce, K. K.....	Port Hope
1 Macdonald, F. M....	Toronto	3 Pepler, S. J.....	Toronto
1 Macdonald, G. A....	Muirkirk	3 Perry, F. A.....	Toronto

First Year—Continued.

3 Phillips, C. H.....	Toronto	3 Tait, D. M.....	St. Thomas
1 Pick, B. W.....	Glen Meyer	3 Tate, H. V.....	Trenton
1 Pickard, L. T. C.....	London	3 Ternan, E. A.....	Arthur
2 Powell, J.	Toronto	3 Thomas, G. C.....	Barrie
1 Pye, D. E.....	Arnprior	3 Thompson, R. M. A...	Strathroy
3 Ramsay, J. H.....	Ottawa	3 Thompson, H. B....	Wellington
2 Read, G. F.....	London Jet.	3 Thomson, G. G.....	Orillia
3 Redfern, B. J.....	Barrie	2 Titus, C. G.....	Westport, N.S.
3 Richardson, S. M.....	Ingersoll	2 Tonkin, C. W.....	Port Arthur
3 Richardson, W. A.		1 Tough, W. G.....	Toronto
	Victoria, B.C.	3 Utley, R. A.....	Toronto
1 Ross, O. W.....	Brantford	3 Van Allen, K. M.....	Toronto
1 Rowswell, H. V.....	Toronto	3 Van Dusen, W. J...	Toronto Jet.
3 Rudolf, O. R.		5 Van Nostrand, N. L...	Toronto
	New Hamstead, Jamaica	3 Vogan, S. J.....	Toronto
3 Russell, C. J.....	Renfrew	1 Wagner, N.	Toronto
3 Ryerson, E. E.....	Toronto	1 Walker, R. M.....	Toronto
1 Salter, E. M.....	Toronto	2 Walton, T.	London
1 Saunders, W. L.....	Goderich	1 Warrington, G. A.....	Cornwall
1 Scandrett, F. R.	Belgrave	1 Warrington, S. J. T...	Toronto
2 Scott, J. M.....	Keenansville	3 Watson, M. B.....	Emery
3 Secord, H. F.....	Toronto	3 White, H. M.....	Chatham
1 Sharon, H. M.....	St. Thomas	1 Whiteside, L.	Delhi
3 Shaw, W. C.....	Toronto	4 Wickens, W. S.....	Toronto
4 Sheard, P.	Toronto	3 Williams, G. K.....	Toronto
3 Sherman, N. C.....	Brighton	3 Wilson, H. P.....	Toronto
2 Smith, F. L.....	Burlington	2 Wilson, J. D.....	Adelaide
1 Sneath, R. G.....	Toronto	1 Wilson, W. H.....	Merritton
1 Spinney, E. H...	Yarmouth, N.S.	3 Wilson, E. R.....	Antrim
2 Spry, R. J.....	London	2 Wilson, R. R.....	Toronto
2 Steele, A. L.....	Fergus	2 Wood, G. A.....	Peterboro
2 Steven, H. M.....	Deer Park	3 Woods, W. H.....	Toronto
3 Stevenson, H.	Bradford	1 Worden, W. G.....	St. Thomas
1 Stone, L. I.....	Toronto	3 Wright, W. J. C.....	Blenheim
1 Stutt, H. G....	West Flamboro	3 Wright, L. A.....	Toronto
3 Sutherland, A. L.		3 Youell, A. W.....	Aylmer West
	Edmonton, Alta.	1 Young, W. S.....	Guelph

NON-REGULAR STUDENTS TAKING FULL COURSE.

1 Allan, L. B.....	Toronto	1 Goldie, R. T.....	Guelph
3 Armstrong, G. E.....	Fletcher	3 Hastings, M. B.....	Midland
2 Barron, J. G....	Carberry, Man.	3 Hickling, F. G....	Dawson, Y.T.
1 Bowman, E. P...	West Montrose	3 Hinch, E. F.....	Toronto
2 Cameron, C. S.....	Beaverton	3 Humphries, R. V.....	Warwick
1 Charlton, O. W. N.....	Toronto	1 Johnston, H. C.....	Toronto
1 Clark, H. J.....	Wellington	3 Johnstone, M. J.	
1 Clarke, T. W.....	Deer Park		San Fernando, Trin.
1 Cond, F....	Birmingham, Eng.	3 Joy, D. G.....	Toronto
2 Coryell, W. R.	Toronto	1 Knight, S.....	Bruce Mines
5 DeLaporte, A. V.	Toronto	2 Kroll, V. T.....	Toronto
2 Earls, E. J.....	Toronto	1 Lee, F. A....	Springfield, Mass.
1 Farmer, S. B....	London, Eng.	3 Lee, R. C....	Springfield, Mass.

Second Year—Continued.

3 Hagerman, F. G.....Cobourg	3 McCordick, S. A..St. Catharines
3 Hall, R. H.....Peterboro	3 McCuaig, P. J.....Gamebridge
1 Harcourt, R. M.....Toronto	3 McDougal, J. E.....Toronto
3 Harper, C. ....Uxbridge	3 McIntosh, W. G.....Seaforth
5 Harris, F. K.....Toronto	1 McKechnie, F. H....Woodstock
1 Harstone, R. G. L....Lindsay	3 McKnight, C. H.....Simcoe
1 Harvey, D. W.....London	1 McMillan, V.....Port Hope
3 Hatch, C. ....Whitby	3 Manning, N. H.....Oshawa
1 Hay, C. O.....Falkenburg	1 Manson, A. B.....Fairview
1 Helliwell, J. G.....Toronto	1 Markle, G. A.....Toronto
3 Hemphill, J. ....Kleinburg	1 Martindale, E. S....Kingsmill
3 Hill, A.....Owen Sound	1 Martyn, O. W.....Mitchell
1 Hogarth, G. ....Toronto	1 Meader, C. H.....Toronto
3 Holmes, A.....Owen Sound	2 Morris, C. A.....Toronto
3 Holmes, C. R.....Chatham	3 Morton, G. ....Carlukc
1 Hopkins, C. H.....Lindsay	1 Muldrew, W. H.....Toronto
1 Hoshal, G. C....Niagara Falls	1 Munro, F. V.....Chatham
1 Huffman, K. ....Toronto	1 Murton, J. C.....Fergus
3 Hughes, C. ....Toronto	1 Nellcs, J. S.....London
1 Hunter, A. E.....Warton	1 Neville, E. A.....Ruthven
3 Irwin, H. ....Hillsburgh	1 Newton, J. ....Sarnia
3 Isbister, J. ....Wingham	1 Newton, W. E.....Toronto
1 Jack, R. T. G.....Toronto	3 Niebel, E. H.....Norwood
3 Jackes, F. P.....Thornhill	3 Odell, L. S.....Odell
1 Jackson, J. E....Oxford Centre	1 O'Gorman, C. ...Depot Harbour
1 James, E. W...Winnipeg, Man.	3 O'Hearn, J. J.....Toronto
5 James, G. A....Dorchester Stn.	1 O'Neil, C. M.
3 Jamieson, E. A.....Pakenham	Erindale-on-Credit
6 Jardine, G. R.....Toronto	1 Pae, A. W. ....Barrie
1 Jardine, W. S.....Omeme	2 Palmer, E. P. B.
1 Johnson, C. C.....Toronto	Zacatecas, Mexico
1 Johnston, C. E.....Toronto	1 Patterson, E. B.....Toronto
1 Johnston, W. J..St. Catharines	1 Petry, A. M.....Toronto
1 Kean, D. J.....Gamebridge	2 Phillips, F. ....Seaforth
3 Kemp, J. B. O.....Toronto	3 Philp, W. M.....Penryn
3 Kettle, T. H.....Hamilton	1 Pigott, R. B.....Hamilton
3 Key, W. R.....Toronto	3 Porter, C. J.....Marburg
5 Klotz, H. N.....Toronto	3 Proctor, I. ....Hamilton
3 Lamont, A. W.....Roome	1 Quail, J. ....Toronto
3 Langmuir, C. B.....Toronto	1 Railton, L. W....Bristol, Eng.
3 Lennox, A. E.....Orillia	1 Ramsperger, A. F..Humber Bay
1 Lloyd, N. C. A.....Schomberg	1 Redfern, C. R.....Toronto
2 Loucks, R. W. E....Minniehill	3 Rutledge, L. T....Glenwilliams
3 Macdonald, J....Victoria, B.C.	3 Sara, R. A.....Toronto
3 Macfarlane, E. D.....Toronto	3 Schlarbaum, A. ....Galt
1 Mackinnon, J. G....Milverton	3 Schweuger, C. E....Hamilton
3 Mackintosh, N. H.	1 Scott, C. A.....Toronto
Bournemouth, Eng.	1 Sedgwick, A. ....Windsor
1 MacLachlan, W. A.....Guelph	1 Segre, B. H....Jamaica, B.W.I.
3 Maclean, B. A. ....Orillia	1 Seibert, F. V....Southampton
1 Macpherson, N. W..St. Thomas	5 Shaw, M. R.....Forest
3 McAlpine, D. D.....Iona	1 Siegner, W. A.....Tavistock
1 McArthur, A. S.....Toronto	3 Sparling, M. ....Davisville
3 McCollum, C. R.....Welland	1 Stayner, D. S.....Toronto

Second Year—Continued.

3 Stewart, J. D.....Chesley	1 Vatcher, A. Freshwater, Newfd.
1 Stewart, N. C.....Nelson, B.C.	1 Venney, L. T.....Brockville
1 Stock, P. H.....Toronto	1 Walker, C. M.....Guelph
1 Street, J. C.....Ottawa	1 Webb, E. E.....Orillia
3 Stroud, S.....Hamilton	3 White, F. C.....Chatham
1 Sutherland, C. C. Edmonton, Alta.	3 Whitelaw, A. R...Brandon, Man.
1 Swan, R. G.....Kincardine	1 Wilkinson, R. G.....Aberarder
3 Sylvester, K. B.....Lindsay	5 Williams, J. A. M...Deer Park
1 Tate, H. W....Wimbledon, Eng.	1 Williamson, O. T. G. Niagara Falls
3 Thompson, E. A....Teeswater	3 Wilson, F. F.....Harriston
1 Tipper, G. A.....Brantford	3 Wilson, L. R.....Brampton
3 Trees, A. G.....Toronto	3 Woodley, G. E.....Waterford
3 Turnbull, W. G.....Toronto	1 Wookey, S. ....Toronto
1 Van Nostrand, J.....Toronto	1 Workman, G. R....Tillsonburg

Third Year.

3 ¹ Akers, H. G.....Toronto	3 Darroch, J.....Gillies Hill
3 ¹ Allan, L. F.....Toronto	3 Doorly, H. C. San Fernando, Trin.
1 Allison, C. B.....S. Woodslee	2 Douglas, R. H...Calgary, Alta.
1 Anderson, R. M....Burlington	2 Dyer, F. C.....Toronto
5 Arens, J. R.....Orillia	1 Eagleson, F. M.....Gorrie
3 ¹ Barber, H. C.....Toronto	1 Edwards, C. ....Toronto
1 Bartlett, E. ....Smithville	1 Evans, S. L.....Corinth
3 ¹ Beckstedt, R. D. S. Lacolle, Que.	1 Ewing, E. O.....Toronto
2 Bedford, F. J.....Lakefield	1 Flanagan, O. L.....Gore Bay
1 Bell, G. G.....Chesley	1 Flint, C. ....Toronto
3 ¹ Bitzer, A. M.....Berlin	1 Foster, A. H.....Guelph
3 Black, G. E.....Stratford	1 Francis, G. C.....Verschoyle
3 Bowes, H. F.....Toronto	3 ¹ Gear, S. S.....Fort Erie
3 ¹ Brace, J. H.....Brockville	1 Grassie, C. A.....Welland
1 Brecken, P. R.....Toronto	1 Greene, W. H.....Toronto
3 ¹ Brown, E. I.....Paris	3 ¹ Gulley, C. L.....Uxbridge
1 Bryce, W. F. M.....Toronto	3 Hackner, J. W.....Sandford
3 ¹ Buchan, P. H...Vancouver, B.C.	3 Haviland, F. L....West Lorne
1 Cameron, D. ....Marinora	1 Henderson, C. D.....Toronto
2 Campbell, J. E.....Ivan	1 Hewson, E. G.....Toronto
3 ¹ Campbell, N. A.Calgary, Alta.	1 Huether, A. D.....Wiarton
3 Carroll, A. M...Richmond Hill	5 Huether, D. J.....Nuestadt
1 Carscallen, H. R. Calgary, Alta.	3 ¹ Hunter, A. N.....Toronto
3 Challen, G. ....Simcoe	3 ¹ Iler, S. B.....Belleville
3 Charlebois, J. P. C....Toronto	1 Johnston, J. T....Kincardine
1 Chesnut, F. H.....Toronto	2 Kennedy, H. G.....Ottawa
1 Cole, W. E.....Lucasville	2 Kennedy, M. D.....Ottawa
4 Collett, W. C.....Toronto	1 Keys, W. R.....Winchester
1 Cory, R. Y.....Toronto	3 Killip, W. C.....Picton
3 ¹ Coyne, H.....St. Thomas	2 Lamb, G. J.....Walkerton
2 Cumming, J. D.....Toronto	3 ¹ Leslie, J. N. M.....Elora
6 Dahl, A. D.....Dutton	3 Lewis, F. C.....Ingersoll
1 Danks, F. A.....Toronto	3 Lynar, H. R.....Toronto
	3 ¹ Macdonald, F. R. Victoria, B.C.

Third Year—Continued.

1 McGeorge, W. G.....	Chatham	2 Rose, R. R.....	Guelph
1 McGregor, J. M.....	Ridgetown	3 Ross, D.	London
1 McLean, L. A.....	Hensall	3 St. Lawrence, J.	London
1 McMaster, W. A. A.		1 Sanderson, A. U.....	Toronto
	Palmerston	1 Secord, A. O.....	Brantford
1 McMordie, H. C.....	London	3 ¹ Shaw, W. E. V.....	Sydney, N.S.W.
1 McRoberts, A. A.....	Pontypool	3 Shearer, H. F.....	Vittoria
5 Madge, N. G.....	Toronto	3 Spence, J. J.....	Toronto
3 Malone, J. E.....	Brechin	3 ¹ Squire, G. E.....	Mitchell
5 Marlatt, K. D.....	Oakville	1 Stamford, W. L.....	Dundas
1 Marshall, R. J.....	Toronto	3 ¹ Starr, R. H.....	Toronto
5 Milligan, G. L.....	Brampton	3 ¹ Stewart, A. W. J.....	Bunyan
1 Mitchell, A. B.....	Toronto	2 Stirrett, G. P.....	Petrollea
4 Molesworth, J. C. P....	Toronto	1 Stock, J. J.....	Toronto
3 ¹ Monk, E. D.....	Cornwall	1 Strathy, E. S. G.....	Toronto
3 Moody, F. H.....	Toronto	1 Stuart, H. B.....	Mitchell
3 ¹ Morice, J. H.....	Niagara Falls	2 Stuart, J. L. G.....	Toronto
3 ¹ Mowbray, F. E. H.....	Kinsale	3 ¹ Sword, A. D.....	Toronto
3 Murray, W. P.....	Fairview	3 ¹ Taylor, J. W. R.....	Keene
5 Nasmith, M. E.....	Toronto	1 Taylor, W. E.....	Owen Sound
3 ¹ O'Donnell, V. J....	Merrickville	3 Thomas, V. C.....	Toronto
3 O'Grady, W. D.....	Toronto	1 Thornley, H.	London
1 ¹ Peckover, H. J.....	Toronto	1 Toms, C. G.....	Toronto
1 Pequegnat, M.	Berlin	1 Tye, H. W.....	Stratford
1 ¹ Phillips, H. G.....	Minden	3 ¹ Van Norman, C. P....	Toronto
3 Pivnick, M.	Toronto	1 Villeneuve, T. L.	
1 ¹ Proctor, E. M.....	Sarnia		Chicoutimi, Que.
3 ¹ Publow, C. F.		1 Walker, J. A.....	Guelph
	Pilot Mound, Man.	3 ¹ Waugh, B. W.....	Berlin
3 Qua, A. H.....	Paris	1 Webb, C. E.....	Toronto
1 Ransom, J. T.....	Toronto	3 ¹ Wedlake, R. M.....	Brantford
1 Redfern, W. B.....	Toronto	3 ¹ Weir, R. P.....	Toronto
1 Richardson, F. L.....	Maple	1 ¹ West, A. M....	Vancouver, B.C.
3 Ricker, H. A.....	Dunnville	1 ¹ White, E. V. H....	Burlington
5 Robertson, F. A.....	Toronto	1 ¹ White, W. R.....	Drayton
1 Robertson, A. R.....	Glencoe	3 ¹ White, W. J.....	Clure, S.A.
1 Robinson, W. A.		3 Wilson, F. D.....	Toronto
	Winnipeg, Man.	1 ¹ Wilson, J. M.....	Toronto
3 Robinson, R. C.		1 ¹ Wing, D. O.....	Berlin
	Winnipeg, Man.	3 ¹ Young, R.	Almonte
5 Rogers, L. J.....	Oshawa		

Fourth Year.

3 Allen, F. G.....	Erie, Pa.	5 Graham, C. W.....	Bradford
1 Anderson, F. J....	Niagara Falls	3 Grasett, C. S.....	Barrie
3 Bowman, H. D.....	London	1 Greene, P. W.....	Orillia
3 Brady, W. S.....	Toronto	1 Hagarty, R. E. W.....	Toronto
3 Evans, S. D.....	Leamington	1 Harkness, A. L.....	Iroquois
3 Ewart, F. R.....	Toronto	1 Harrison, E.	Belleville
6 Fux, P. C.....	Brantford	3 Hill, H. O.....	Toronto
2 Galt, G.....	Winnipeg, Man.	1 Hogg, T. H.....	Chippawa
1 Garrow, A. B.....	Toronto	3 Hookway, C. W.....	London

Fourth Year—*Continued.*

3 Hull, A. H.....	Hamilton	1 Neelands, R. E. K....	Brampton
3 Hutton, C. H.....	Hamilton	2 Neilly, B.	Bradford
1 Hyland, H. M.....	Toronto	1 Nourse, A. E.....	Deer Park
3 Hyman, E. W.....	London	3 Quance, G. E.....	Delhi
3 Ireland, L. G.....	Durham	1 Rannie, J. L.....	Toronto
3 Kay, E. W.....	Paris	3 Richardson, C. W. B...	Warton
3 Keith, D. F.....	Toronto	1 Roddick, J. O.....	Brantford
1 Kinghorn, A. A.....	Toronto	Scott, W. A.....	Galt
3 LePan, A. D.....	Owen Sound	1 Smith, D. A.....	Claude
3 Linton, A. P.....	Galt	3 Smithrim, E. R.....	Cairngorm
1 McFarlane, J. B....	Claremont	3 Spencer, A. C.....	London
3 McGugan, D. J.....	Ekfrid	1 Stewart, L. D. N...	Collingwood
3 McNeill, F. W.....	Toronto	1 Stiles, J. A.....	London
1 Malcolmson, W. S....	Toronto	1 Thompson, P. M.....	Picton
6 Mason, D. H. C.....	Toronto	3 Thomson, O. R.....	Highgate
1 Melson, J. W.....	Toronto Jct.	3 Tillson, E. D.....	Tillsonburg
3 Miller, L. R.....	Orillia	1 Wilkes, E. D.....	Toronto
1 Mills, G. G.....	Toronto	3 Wilson, A. F.....	Toronto
1 Moore, J. M. C.....	London	3 Wilson, J. N.....	Shanly
1 Neelands, E. W.....	Forest	3 Wood, E. M.....	Sweaburg

Occasional Students.

Carmichael, C. G.	Toronto.
------------------------	----------

Arts Students taking instruction in Applied Chemistry, Assaying, etc.

Casselman, A. C.	Toronto.
Firth, T.	Edgehill.
MacLean, A.	Byron.

Summary.

First Year Students	314
Second Year Students	205
Third Year Students	143
Fourth Year Students	58
Occasional Students	1
Arts Students	3

PRIZEMEN.

Engineering.

1879.	I.	Year.....	J. McAree.....	1st	Prize.
1880.	II.	"	J. L. Morris.....	1st	"
1881.	I.	"	G. H. Duggan.....	1st	"
	II.	"	D. Jeffrey	1st	"
1882.	I.	"	A. R. Raymer.....	1st	"
	I.	"	E. W. Stern.....	2nd	"
	II.	"	G. H. Duggan.....	1st	"
	III.	"	D. Jeffrey	1st	"
1883.	I.	"	B. A. Ludgate.....	1st	"
	I.	"	A. M. Bowman.....	2nd	"
	II.	"	A. R. Raymer.....	1st	"
	II.	"	E. W. Stern.....	2nd	"
	III.	"	G. H. Duggan.....	1st	"
1884.	II.	"	B. A. Ludgate.....	1st	"
	III.	"	E. W. Stern.....	1st	"
	III.	"	A. R. Raymer.....	2nd	"
1885.	I.	"	A. E. Lott.....	1st	"
	I.	"	J. Rogers	2nd	"
	II.	"	T. K. Thomson.....	1st	"
	III.	"	B. A. Ludgate.....	1st	"
1886.	I.	"	C. H. C. Wright.....	1st	"
	I.	"	J. E. Ross.....	2nd	"
	II.	"	A. E. Lott.....	1st	"
1887.	I.	"	H. E. T. Haultain.....	1st	"
	II.	"	C. H. C. Wright.....	1st	"
	III.	"	A. E. Lott.....	1st	"
	III.	"	J. Rogers	2nd	"
1888.	I.	"	E. B. Merrill.....	1st	"
	I.	"	F. M. Bowman.....	2nd	"
	II.	"	D. D. James.....	1st	"
	III.	"	C. H. C. Wright.....	1st	"
1889.	I.	"	J. K. Robinson.....	1st	"
	I.	"	G. E. Silvester.....	2nd	"
	II.	"	E. B. Merrill.....	1st	"
	II.	"	F. M. Bowman.....	2nd	"
	III.	"	D. D. James.....	1st	"
1890.	I.	"	C. Fairchild.....	1st	"
	II.	"	E. B. Merrill.....	2nd	"
	III.	"	J. K. Robinson.....	1st	"
	III.	"	F. M. Bowman.....	1st	"
1891.	I.	"	A. J. McPherson.....	1st	Prize.
	I.	"	R. B. Watson.....	2nd	"
	II.	"	J. B. Goodwin.....	1st	"
	III.	"	G. E. Silvester.....	1st	"
	III.	"	C. W. Dill.....	2nd	"
1892.	I.	"	A. E. Bergey.....	1st	"
	I.	"	R. W. Angus.....	2nd	"
	II.	"	A. J. McPherson.....	1st	"
	II.	"	R. B. Watson.....	2nd	"
	III.	"	E. J. Laschinger.....	1st	"
	III.	"	C. Fairchild.....	2nd	"

The Grant of prizes was withdrawn at the close of 1892.

Architecture.

The prize in Architecture was the gift of Mr. D. B. Dick, Architect, Toronto.

1891. I. Year.....	H. F. Ballantyne.
1892. I. Year.....	J. A. Ewart.
1893. I. Year.....	A. H. Harkness.
1894. I. Year.....	E. A. Forward.
1895. I. Year.....	W. F. Scott.
1896. I. Year.....	D. Macintosh.
1899. I. Year.....	W. F. Shepherd.

Civil Engineering.

Prizes are awarded for general proficiency in the subjects of the Third Year.

Date.	Name.	Donor.
1897. M. B. Weekes.....	T. Kennard	Thomson, C.E.
1898. J. A. Stewart.....	"	"
1899. T. Shanks	"	"
1900. E. H. Phillips.....	"	"
1901. H. P. Rust.....	"	"
1902. W. F. Ratz.....	"	"
1903. C. R. Young.....	"	"
1904. W. N. Moorhouse.....	"	"
1905. W. Barber	"	"
1905. N. L. Crosby.....	Noel Marshall, Esq.	
1906. W. P. Near, B.A.....	T. Kennard Thomson, C.E.	
1906. W. A. M. Cook.....	Noel Marshall, Esq.	
1907. M. K. McQuarrie.....	T. Kennard Thomson, C.E.	
1907. T. H. Hogg.....	Noel Marshall, Esq.	

Mining Engineering.

1905. G. S. Scott.....	Hon. W. H. Montague, M.D.
1905. W. A. Begg.....	"
1906. J. A. McKenzie.....	"
1906. W. Huber	"
1907. B. Neilly	

Mechanical Engineering.

1905. W. G. Nicklin.....	Standard Silver Co.
1906. D. W. Marrs.....	" " "
1907. H. O. Hill.....	" " "

Electrical Engineering.

1905. C. E. Sisson.....	Noel Marshall, Esq.
1906. A. H. Hull.....	" " "
1907. F. R. Ewart.....	" " "

Mechanical and Electrical Engineering.

1897. A. T. Gray.....	F. A. Riehle, Esq.
1898. F. C. Smallpiece.....	"
1905. C. B. Aylesworth.....	Standard Silver Co.
1906. E. M. Wood.....	" " "
1907. H. Raine	" " "

Architecture.

1906. A. W. McConnell.....	Hon. W. H. Montague, M.D.
1907. G. N. Molesworth.....	"

Analytical and Applied Chemistry.

1906. C. C. Forward.....	Standard Silver Co.
1907. P. F. Morley.....	" " "

Degree of Bachelor of Applied Science.

Date of admission. Name.	Date of admission. Name.
1893. Alison, T. H.	1907. Brian, M. E.
1897.*Angus, R. W.	1896. Brodie, W. M.
1904.*Angus, H. H.	1906. Brown, T. D.
1901. Ardagh, E. G. R.	1895. Bucke, W. A.
1907. Armer, J. C.	1907. Bunnell, A. E. K.
1896. Armstrong, J.	1906. Burnham, F. W.
1897.*Bain, J. W.	1900. Burnside, J. T. M.
1907. Baker, M. H.	1905. Burwash, N. A.
1894.*Ballantyne, H. F.	1905. Campbell, A. J.
1907.*Banting, E. W.	1905. Campbell, A. M.
1906.*Barber, W.	1898. Carpenter, H. S.
1901. Barley, J. H.	1899. Carter, W. E. H.
1907. Bates, M.	1903.*Chace, W. G.
1907.*Betts, H. H.	1903.*Chadsey, S. B.
1902. Barrett, R. H.	1898. Charlton, H. W.
1895. Beauregard, A. T.	1894.*Chewett, H. J.
1906. Begg, W. A.	1903.*Christie, W.
1903. Blair, W. J.	1905. Christie, U. W.
1902.*Boswell, M. C.	1906. Coates, P. C.
1899. Boyd, W. H.	1905.*Code, T. F.
1902. Brandon, E. T.	1900.*Chubbuck, L. B.
1907. Brandon, H. E.	1902. Cockburn, J. R.
1903. Brereton, W. P.	1907.*Cook, W. A. M.

*Degree with honours.

Degree of Bachelor of Applied Science—*Continued.*

Date of admission. Name.	Date of admission. Name.
1900. Coulthard, R. W.	1897.*Haight, H. V.
1907. Cousins, E. L.	1904. Hamilton, J. F.
1901. Craig, J. A.	1907. Hamilton, C. B.
1905. Crerar, S. R.	1905. Hanes, G. S.
1906.*Crosby, N. L.	1900. Hare, W. A.
1903.*Culbert, M. T.	1897.*Harkness, A. H.
1907. Daniels, W. N.	1906. Harris, C. J.
1901. Davison, J. E.	1907. Hartney, J. C.
1905. Davison, A. E.	1902. Harvey, C.
1907.*Death, N. P. F.	1901. Hemphill, W.
1902. DeCew, J. A.	1895. Herald, W. H.
1901. Dickson, G. W.	1906.*Heron, J. B.
1901.*Dixon, H. A.	1907. Hett, S.
1896. Dobie, J. S.	1906. Hewson, W. G.
1907. Dundass, C. S.	1901. Holcroft, H. S.
1902.*Eason, D. E.	1907. Hopkins, C. H.
1904. Edwards, W. M.	1896. Hull, H. S.
1897.*Elliott, H. P.	1894. James, D. D.
1903. Empey, J. M.	1893. James, O. S.
1895.*Ewart, J. A.	1905. James, E. A.
1904. Fensom, C. J.	1905. Jermyn, P. V.
1906. Ferguson, G. H.	1905.*Job, H. E.
1906.*Fierheller, H. S.	1895. Johnson, S. M.
1905.*Ford, A. L.	1902. Johnson, J. A.
1901. Foreman, W. E.	1896. Johnson, A. C.
1904.*Gaby, F. A.	1907. Johnston, C.
1903.*Gagné, S.	1907. Jones, G. R.
1904. Gardner, J. C.	1907. Jones, T.
1903.*Gibson, A. E.	1907. Jupp, A. E.
1904.*Gibson, N. R.	1894.*Keele, J.
1904. Gibson, W. S.	1903. Knight, R. H.
1904.*Gillespie, P.	1899. Kormann, J. S.
1894. Goodwin, J. B.	1894. Laidlaw, J. T.
1899. Grant, W. F.	1893. Laing, A. T.
1898. Gray, A. T.	1906. Lancaster, H. M.
1905. Gray, W. W.	1907. Lang, J. L.
1905. Greenwood, W. K.	1903. Langmuir, F. L.
1907. Guest, W. S.	1893.*Laschinger, E. J.
1901. Guy, E.	1901. Latham, R.

*Degree with honours.

Degree of Bachelor of Applied Science—*Continued.*

Date of admission. Name.	Date of admission. Name.
1906. Latornell, A.	1907. Mitchell, B. F.
1906. Latornell, A. J.	1906. Moffatt, R. W.
1893.*Lawson, W.	1900. Monds, W.
1893. Lea, W. A.	1905.*Montgomery, R. H.
1906.*Loudon, T. R.	1906. Munro, G. R.
1907. MacKenzie, K. A.	1907.*Near, W. P.
1894. McAllister, A. L.	1901. Neelands, E. V.
1895. McAllister, J. E.	1904. Nevitt, I. H.
1893. McAree, J.	1907. Nicklin, W. G.
1905. McAuslan, H. J.	1904. Oliver, E. W.
1904. McBride, A. H.	1904. Pace, J. D.
1907.*McConnell, A. W.	1905. Pace, G.
1905. McCuaig, O. B.	1906.*Pardoe, W. S.
1893. McEntee, B.	1907. Park, D. G.
1905. McEwen, G. G.	1905. Parke, J.
1904. McFarlane, J. A.	1904. Patten, B. B.
1906. McFarlane, W. G.	1906. Phillips, E. P. A.
1905.*McGibbon, C. P.	1904. Plunkett, T. H.
1896.*McGowan, J.	1901. Pope, A. S. H.
1905. McKay, C. D.	1907. Porte, W. B.
1896.*McKinnon, H. L.	1903.*Powell, G. G.
1903. McMaster, A. T. C.	1902.*Price, H. W.
1901. McMillan, J. G.	1907. Purser, R. C.
1894.*McPherson, A. J.	1906. Ramsey, G. L.
1895. McTaggart, A. L.	1905. Raymond, D. C.
1902.*McVean, H. G.	1906. Reid, F. B.
1897. Macallum, A. F.	1900.*Revell, G. E.
1897. Macbeth, C. W.	1900. Richards, E.
1904. Macintosh, D.	1906.*Riddell, M. R.
1907.*MacLachlan, W.	1901. Roaf, J. R.
1905. Marriott, F. G.	1903. Robertson, H. D.
1897. Martin, T.	1907. Robertson, N. R.
1903.*Matheson, P.	1898.*Robinson, A. H. A.
1907.*Menzies, J. M.	1907. Rogers, C. H.
1894.*Merrill, E. B.	1907. Rolfson, O.
1893. Milne, C. G.	1907. Ross, R. C.
1896. Mines, W. H.	1907.*Rothwell, T. E.
1895.*Minty, W.	1905. Roxburgh, G. S.
1894. Mitchell, C. H.	1905. Rutherford, F. N.

*Degree with honours.

Degree of Bachelor of Applied Science—*Continued.*

Date of admission. Name.	Date of admission. Name.
1902. Rust, H. P.	1901. Thorne, S. M.
1902. Sauer, M. V.	1901. Thorold, F. W.
1901. Saunders, H. W.	1905. Townsend, C. J.
1905.*Scheibe, H. M.	1905.*Townsend, D. T.
1900.*Shanks, T.	1906. Traill, J. J.
1905. Sheply, J. D.	1904. Trees, S. L.
1895. Shields, J. D.	1896. Tremaine, R. C. C.
1899. Shipley, A. E.	1905. Trimble, A. V.
1906. Shirriff, C. H.	1905. Tucker, B. B.
1903. Sinclair, D.	1906.*Turner, W. E.
1906. Slater, F. W.	1900. Wagner, W. E.
1902.*Smallpiece, F. C.	1906. Wagner, H. L.
1898. Smiley, R. W.	1905.*Walker, E. W.
1904. Smith, H. G.	1906. Watson, J. P.
1905. Smither, W. J.	1898. Weekes, M. B.
1894.*Speller, F. N.	1901. Weir, H. M.
1894. Squire, R. H.	1906.*Wells, A. F.
1902. Stevenson, W. H.	1905.*Williams, C. G.
1898.*Stull, W. W.	1899.*Williamson, D. A.
1903. Sutherland, W. H.	1904.*Wilson, N. D.
1906. Swan, W. G.	1905. Worthington, W. R.
1903. Teasdale, C. M.	1893.*Wright, C. H. C.
1900.*Tennant, D. C.	1902. Wright, R. T.
1901. Tennant, W. C.	1905. Wright, W. F.
1893. Thomson, R. W.	1905.*Young, C. R.
1905. Thomson, S. E.	1907. Young, W. H.
1906. Thomson, L. R.	1903. Zahn, H.
1907. Thomson, J. E.	

Degree of Civil Engineer (C.E.)

1898. Alison, T. H.	1889. Tyrrell, J. W.
1898. Ashbridge, W. T.	1894. Tyrrell, H. G.
1895. Bowman, A. M.	1892. Thomson, T. K.
1893. Bowman, F. M.	1885. Morris, J. L.
1892. Chewett, H. J.	1896. Moore, J. E. A.
1900. Connor, A. W.	1898. Mitchell, C. H.
1901. Francis, W. J.	1901. McDowall, R.
1900. Haultain, H. E. T.	1895. McAllister, J. E.
1893. Innes, W. L.	1886. Kennedy, J. H.

*Degree with honours.

Degree of Mining Engineer (M.E.)

Date of admission. Name.	Date of admission. Name.
1900. Laidlaw, J. T.	1897. Bucke, M. A.

.Degree of Mechanical Engineer (M.E.).

1900. White, A. V.	1905. Laschinger, E. J.
1901. Johnston, A. C.	

Degree of Electrical Engineer (E.E.).

1896. Ross, R. A.	1902. Elliott, H. P.
1903. Chubbuck, L. B.	1905. Hemphill, W.

GRADUATES.

Graduates are requested to inform the Secretary of changes in their addresses.

1881.

Course.	Name and address.	Occupation.
1. J. L. Morris, C.E., O.L.S.....	Morris and Moore, Pembroke, Ont.	Land Surveyors and Architects.

1882.

1. D. Jeffrey Contractor.
Windsor, Missouri.
1. J. H. Kennedy, C.E., O.L.S..... Chief Engineer, Vancouver, Victoria
Keremeos, B.C. & Eastern Railway.
1. J. McAree, B.A.Sc., D.T.S..... (Deceased).

1883.

1. D. Burns, O.L.S..... Instructor in Mathematics and Plan
A.M. Can. Soc. C.E., Drawing, Carnegie Technical
Pittsburgh, Pa. Schools.
1. G. H. Duggan..... Manager, Mexico Heat, Light and
M. Can. Soc. C.E., Power Co.
Mexico, Mex.
1. J. W. Tyrrell, C.E., D.L.S..... Consulting Engineer and Surveyor.
Hamilton, Ont.

1884.

1. W. C. Kirkland..... Principal Asst. Engineer, Drainage,
New Orleans, La. Sewage and Water Board of New
Orleans.
1. J. McDougall, B.A..... York County Engineer.
A.M., Inst. C.E.
York County Mun. Hall,
Toronto, Ont.
1. A. R. Raymer..... Asst. Chief Engineer, P. & L. E. Ry.
Pittsburgh, Pa.
1. James Robertson, O.L.S..... Engineer and Surveyor.
Glencoe, Ont.
1. E. W. Stern..... Weiskopf & Stern,
M. Am. Soc. C.E., Consulting Engineers, Steel
68 William St., New York. Structures, Buildings, etc.

1885.

Course.	Name and address.	Occupation.
1. J. F. Bleakley.....	Civil Engineer. Sullivan Block, Seattle, Wash.	
1. H. J. Bowman, D. & O.L.S.....	Civil Engineer and Land Surveyor M. Can. Soc. C.E., Berlin, Ont.	(County Clerk and Treasurer.)
1. E. E. Henderson, O.L.S.....	Civil Engineer. Henderson, P.O., Me.	
1. B. A. Ludgate, O.L.S.....	Asst. Engineer, P. & L. E. Ry. Beaver, Pa.	
1. O. McKay, O.L.S.....	Civil Engineer and Surveyor. Walkerville, Ont.	

1886.

1. A. M. Bowman, D.L.S.....	Pennsylvania Contracting Co. Pittsburgh, Pa.	
1. E. B. Hermon, D. & O.L.S.....	Asst. Engineer Vancouver Power Co. Vancouver, B.C.	
1. Robert Laird, O.L.S.....	Laird & Routly, Engineers and Sur- Haileybury, Ont.	veyors.
1. T. Kennard Thomson, C.E.....	Consulting Engineer. M. Can. Soc. C.E., M. Am. Soc. C.E., 703 Park Row Building, New York.	
1. H. G. Tyrrell, C.E.....	Chief Engineer, A.M. Can. Soc. C.E., 2151 Fulton Ave., Cincinnati, O.	The Brackett Bridge Co.

1887.

1. J. C. Burns (deceased).		
1. A. E. Lott.....	Consulting Railway Engineer, Los Angeles, Cal.	441 Bradbury Building.
1. A. L. McCulloch, O.L.S.....	City Engineer. A.M. Can. Soc. C.E., Nelson, B.C.	
1. F. Martin, M.B., O.L.S.....	Physician.	
1. C. H. Pinbey, D. & O.L.S.....	Engineer for Contractor, Soulanges Coteau Landing, Que.	Canal.
1. J. Rogers, O.L.S.....	Town Engineer. Mitchell, Ont.	

1888.

Course.	Name and address.	Occupation.
1. J. F. Apsey, O.L.S.....	Asst. Div. Engineer, 25 E. North Ave., Baltimore, Md.	Baltimore Sewerage Commission.
1. W. T. Ashbridge, C.E.....	Engineer and Surveyor. Edmonton, Alta.	
1. Edward F. Ball.....	Asst. Engineer of Resurveys, Central A.M. Can. Soc. C.E., 335 Madison Ave., New York, N.Y.	& Hudson River Railroad.
1. D. B. Brown, O.L.S.....	Locating Engineer, Quebec, P.Q.	Transcontinental Ry. (G.T.P.)
1. C. M. Canniff.....	Engineer, Expanded Metal and Fire- Toronto, Ont. Proofing Co., Ltd.	
1. H. J. Chewett, B.A.Sc., C.E....	Mechanical Engineer, Evans Rotary A.M. Can. Soc. C.E., Manning Arcade, Toronto, Ont.	Engine Co., Ltd.
1. J. Gibbons, D. & O.L.S.....	Surveying Staff, Dept. of Interior. Ottawa, Ont.	
1. R. McDowall, O.L.S., C.E.....	Town Engineer. A.M. Can. Soc. C.E., Owen Sound, Ont.	
1. G. W. McFarlen, O.L.S.....	City Engineer's Staff. Toronto, Ont.	
1. C. J. Marani.....	Designing and Consulting Structural Anacortes, Wash. Engineer for the Russia Cement Co.	
1. G. R. Mickle, B.A.....	Professor of Mining Engineering, Toronto, Ont. University of Toronto.	
1. J. H. Moore, O.L.S.....	Town Engineer. Smith's Falls, Ont.	
1. G. H. Richardson.....	Contractors' Engineer, Hervey Junct., Que. Transcontinental Ry.	
1. K. Rose	Manager, Evans Rotary Engine Co. Curry Bldg., Toronto. of Canada.	
1. J. E. Ross, D. & O.L.S.....	Surveying Staff, Dept. of Interior. Kamloops, B.C.	
1. C. H. C. Wright, B.A.Sc.....	Professor of Architecture, Toronto, Ont. University of Toronto.	

1889.

Course.	Name and address.	Occupation.
1. B. Carey	Toronto, Ont.	
1. W. J. Chalmers.....	Draftsman, Office U.S. Engineer. Pittsburgh, Pa.	
1. W. A. Clement.....	City Engineer. M. Can. Soc. C.E., Vancouver, B.C.	
1. G. F. Hanning.....	Locating Engineer, Transcontinental Winnipeg, Man.	Railway, Lake Abitibi.
1. H. E. T. Haultain, C.E.....	Mining Engineer. M. Can. Soc. C.E., Craigmont, Ont.	
1. J. Irvine	Civil Engineer. Harriston, Ont.	
1. D. D. James, B.A., B.A.Sc.....	Assistant Engineer, Canadian North- Wahnapitae, Ont.	ern Ry.
1. F. X. Mill (deceased.)		
1. H. K. Moberley.....	District Engineer and Surveyor. Moosomin, Sask.	
1. T. R. Rosebrugh, M.A.....	Professor of Electrical Engineering, Toronto, Ont.	University of Toronto.
1. T. Wickett, M.D.....	Physician. 362 Cannon St. E., Hamilton, Ont.	

1890.

5. W. E. Boustead (deceased).		
1. F. M. Bowman, O.L.S., C.E.....	Structural Engineer, Pittsburgh, Pa.	Riter-Conley Mfg. Co.
1. M. A. Bucke, M.E. (deceased).		
1. G. D. Corrigan (deceased).		
1. J. A. Duff, B.A. (deceased).		
1. A. B. English (deceased).		
1. N. L. Garland.....	Garland Manufacturing Co., Toronto, Ont.	76 Bay Street.
1. J. Hutcheon, O.L.S.....	Engineer and Surveyor. Guelph, Ont.	
1. W. L. Innes, O.L.S., C.E.....	Manager, Canadian Cannery, Ltd. Simcoe, Ont.	
1. E. B. Merrill, B.A., B.A.Sc.....	Chief Asst. Engineer, Power Const. Winnipeg, Man.	Dept.

1890—Continued.

Course.	Name and address.	Occupation.
1. J. R. Pedder (deceased).		
3. R. A. Ross, E.E.....	Ross & Holgate, Consulting Electrical 80 St. Francois Xavier St., and Mechanical Engineers. Montreal, P.Q.	
1. T. H. Wiggins, O.L.S.....	District Surveyor and Engineer, Regina, Sask.	Dept. of Public Works.
1. W. J. Withrow.....	Patent Examiner, Patent Branch, Ottawa, Ont.	Dept. of Agriculture.

1891.

1. H. J. Beatty, O.L.S.....	Engineer and Surveyor. Eganville, Ont.	
1. T. R. Deacon, O.L.S.....	President and General Manager, Winnipeg, Man.	Manitoba Iron Works, Ltd.
1. C. W. Dill.....	C. W. Dill & Co., Civil Engineers and A.M. Can. Soc. C.E., Contractors, 318 Continental Life Toronto, Ont.	Building.
5. O. S. James, B.A.Sc.....	Chemist for J. E. Wilkinson Co., Toronto, Ont.	Gold and Silver Refiners,
1. A. Lane (deceased).	71 Lombard Street.	
1. J. E. McAllister, B.A.Sc., C.E....	Manager British Columbia Copper Greenwood, B.C.	Co., Ltd.
3. E. B. Merrill, B.A., B.A.Sc.....	Electrical Engineer, Power Dept. Winnipeg, Man.	
1. J. E. A. Moore, C.E.....	Consulting and Contracting Engineer. 519 Caxton Bldg., Cleveland, O.	
1. W. Newman, O.L.S.....	Consulting Engineer. A.M. Can. Soc. C.E., Windsor, Ont.	
1. J. K. Robinson (deceased).		
1. W. B. Russel.....	Civil Engineer and Contractor. 318 Continental Life Bldg., Toronto, Ont.	
1. G. E. Silvester, O.L.S.....	Chief Engineer, Canadian Copper Co. Mem. Am. Inst. M.E., Copper Cliff, Ont.	
1. H. D. Symmes.....	Engineer and Contractor. Niagara Falls South, Ont.	

1892.

Course.	Name and address.	Occupation.
1.	J. R. Allan, O.L.S.....	Ranchman. Macleod, Alta.
1.	T. H. Alison, B.A.Sc., C.E.....	Chief Engineer, Augustus Smith Co. 149 Broadway, New York.
1.	A. G. Anderson.....	Hardware Merchant. Port Dover, Ont.
1.	C. Fairchild, D. & O.L.S.....	Surveying Staff, Dept. of Interior. Brantford, Ont.
1.	J. B. Goodwin, B.A.Sc.....	Resident Engineer of Construction, McCall's Ferry, Pa. McCall's Ferry Power Co.
4.	C. E. Laingley.....	Laingley & Howland, Architects. Continental Life Bldg., Toronto, Ont.
1.	A. T. Laing, B.A.Sc.....	Secretary, Faculty of Applied Science, Toronto, Ont. University of Toronto.
1.	E. J. Laschinger, B.A.Sc., M.E..	Mechanical Engineer, Estimating Johannesburg, Branch, Consolidated Gold Fields. Transvaal, S.A.
5.	W. L. Lawson, B.A.Sc.....	Manager, Great Western Sugar Co. Sterling, Col.
3.	W. A. Lee, B.A.Sc. (deceased).	
1.	B. McEntee, B.A.Sc.....	28 Queen St. E., Toronto.
3.	C. G. Milne, B.A.Sc.....	Chief Engineer, Hamilton Bridge Hamilton, Ont. Works Co.
1.	Chas. H. Mitchell, B.A.Sc.....	Consulting Hydro-electric Engineer, C.E., M. Can. Soc. C.E., Traders' Bank Bldg. Toronto. M. Am. Soc. C.E.
1.	N. L. Playfair.....	Supt. Playfair Lumber Co. Midland, Ont.
1.	J. M. Prentice (deceased).	
1.	J. A. Ross.....	Designer L. S. & M. S. Railway. Cleveland, O.
1.	Albert N. Smith.....	Engineer, Wm. B. Pollock Co. Youngstown, O.
1.	R. W. Thompson, B.A.Sc.....	Mine Captain, Consolidated Gold Johannesburg, Fields of South Africa. Transvaal, S.A.
3.	A. V. White, M.E.....	Mechanical Engineer. Toronto, Ont.

1893.

Course.	Name and address.	Occupation.
1. A. G. Ardagh.....	Engineering Staff C.P.R. Montreal, Que.	
4.*H. F. Ballantyne, B.A.Sc.....	Architect. 244 Fifth Ave., New York, N.Y.	
1. G. L. Brown, O.L.S.....	Civil Engineer and Land Surveyor. A.M. Can. Soc. C.E., Morrisburg, Ont.	
1.*L. C. Charlesworth, D.L.S.....	Director of Surveys for Alberta. Edmonton, Alta.	
1. T. H. Dunn, O.L.S.....	Engineer and Surveyor. Winchester, Ont.	
1. J. M. R. Fairbairn, P.L.S.....	Division Engineer, C.P.R. Montreal, Que.	
4.*W. Fingland	Architect and Structural Engineer. 317 Portage Ave., Winnipeg, Man.	
1. C. Forester	Toronto, Ont.	
1.*Walter J. Francis, C.E.....	Consulting Engineer, M. Can. Soc. C.E., Sovereign Bank Bldg. M. Am. Soc. C.E., Montreal, Que.	
3.*A. R. Goldie.....	Manager, Goldie & McCulloch Co. Galt, Ont.	
3. S. C. Hanly.....	Mechanical Engineer. Midland, Ont.	
4.*J. Keele, B.A.Sc.....	Geological Survey of Canada. Ottawa, Ont.	
1. J. T. Laidlaw, B.A.Sc., M.E....	Firm of McVitte & Laidlaw, Mining Cranbrook, B.C. Engineers and Surveyors.	
3. F. L. Lash.....	Manager, Batavia Electric Light Co. Batavia, Java.	
1. A. L. McAllister, B.A.Sc.....	Draftsman, 356 W. 42nd St., American Steel Corporation. New York, N.Y.	
1. T. J. McFarlen.....	Chemist. 80 Waverley Rd., Toronto, Ont.	

1893—Continued.

Course.	Name and address.	Occupation.
1.*A. J. McPherson, B.A.Sc.....	Superintendent of Highways, D.L.S., Regina, Sask.	Province of Saskatchewan.
1. A. F. Macallum, B.A.Sc.	Consulting Engineer, Toronto, Ont.	612 Continental Life Building.
1. W. T. Main.....	Div. Engineer's Office, Chicago & Baraboo, Wis.	North Western Ry. Co.
1. V. G. Marani.....	Consulting Engineer and Assistant Cleveland, Ohio.	Supt. of Cuyahoga County Bldgs.
1. W. Mines, B.A.Sc.....	With Brown Hoisting Co. Cleveland, Ohio.	
3.*J. M. Robertson.....	Supt., Repair and Testing Dept., Mon- treal, P.Q.	treal Light, Heat and Power Co.
1. R. Russell	Civil Engineer. Pembroke, Ont.	
1.*F. N. Speller, B.A.Sc.....	Metallurgical Engineer, National Pittsburgh, Pa.	Tube Co.
1. R. H. Squire, B.A.Sc., O.L.S....	(Deceased.)	
1. W. V. Taylor, O.L.S.....	Dominion Engineering and Construc- A.M. Can. Soc. C.E., Montreal, P.Q.	tion Co.
1.*R. B. Watson.....	Dept. of Public Works. Regina, Sask.	

1894.

3.*R. W. Angus, B.A.Sc.....	Professor of Mechanical Engineering, Toronto, Ont.	University of Toronto.
1. H. F. Barker.....	Box 31, Halifax, N.S.	
1. A. T. Beauregard, B.A.Sc.....	Laboratory Engineer, Public Service Newark, N.J.	Corporation of New Jersey.
1. A. E. Bergey.....	With American Bridge Co., Pittsburgh, Pa.	Keystone Branch.
3. D. G. Boyd.....	Draftsman, Public Works Dept. Toronto, Ont.	
3. W. A. Bucke.....	With Canadian General Electric Co. Toronto, Ont.	
1. J. Chalmers, O.L.S.....	Structural Engineer, A.M. Can. Soc. C.E., Edmonton, Alta.	Dept. of Public Works.

*Diploma with honours.

1894—Continued.

Course.	Name and address.	Occupation.
4.*J. A. Ewart, B.A.Sc.....	193 Sparks St., Ottawa, Ont.	Architect and Engineer.
3. W. J. Herald, B.A.Sc.....	With Dominion Iron & Steel Co. Sydney, N.S.	
3. H. E. Job, B.A.Sc.....	Hamilton, Ont.	Electrical Manufacturer, 103 McNab St. N.
3. A. C. Johnston, B.A.Sc., M.E...		Consulting Mechanical Engineer.
1. S. M. Johnston, B.A.Sc., P.L.S..	Greenwood, B.C.	City Engineer.
1. J. E. Jones.....	Pittsburgh, Pa.	Manager, M. H. Treadwell & Co., Engineers, Founders and Ma- chinists.
3. N. M. Lash.....	Montreal, P.Q.	Asst. Electrical Engineer, Bell Telephone Co.,
1.*A. L. McTaggart, B.A.Sc.....	Rockefeller Bldg., Cleveland, O.	Office of A. G. McKee, Consulting Engineer.
3.*W. Minty, B.A.Sc.....	Workington, Eng.	General Manager, Moss Bay Hema- tite, Iron and Steel Co., Ltd.
3. C. J. Nicholson.....	Preston, Ont.	
1. H. Rolph	80 St. Francois Xavier St. Montreal, Que.	Vice-President, Metcalfe Engineering Ltd.
1. J. D. Shields, B.A.Sc.....	Toronto, Ont.	Sewer Engineer, Staff of City Engineer.
3. A. K. Spotton.....	Galt, Ont.	Chief Engineer, Goldie & McCulloch Engine Works.
1. Angus Smith, O.L.S.....	Regina, Sask.	City Engineer.
3. R. T. Wright, B.A.Sc.....	Pittsburgh, Pa.	Draftsman, Westinghouse Machine Co.

*Diploma with honours.

1895.

Course.	Name and address.	Occupation.
1. J. Armstrong, B.A.Sc.....	District Engineer, G.T.P. Ry. Quebec, Que.	
3. A. E. Blackwood.....	Manager, New York Office, 42 Broadway, New York.	Sullivan Machinery Co.
1. E. J. Boswell, D.L.S.....	Winnipeg, Man.	
3. G. Brebner (deceased).		
3. W. M. Brodie, B.A.Sc.....	With the Green Engineering Co. of Pittsburgh, Pa.	Chicago.
3. L. L. Brown.....	Supt., The Foundation Co. 77 Rutland Rd., Brooklyn, N.Y.	
4. R. J. Campbell.....	Artist, Chicago Tribune. Chicago, Ill.	
3. A. W. Connor, B.A., C.E.....	Firm of Connor, Clark & Monds, 36 Toronto St., Toronto, Ont.	Consulting Structural Engineers.
1. J. S. Dobie, B.A.Sc., O.L.S.....	Director of Surveys for Saskatche- Regina, Sask.	wan.
1. F. W. Guernsey.....	Engineer, Consolidated Mining and Trail, B.C.	Smelting Co.
4.*A. H. Harkness, B.A.Sc.....	Asst. Structural Engineer, Toronto, Ont.	Canada Foundry Co.
3. H. S. Hull, B.A.Sc.....	Structural Drawing, Johnstown, Pa.	Cambria Steel Co.
3.*J. McGowan, B.A., B.A.Sc.....	Associate Professor of Applied Me- Toronto, Ont.	chanics, University of Toronto.
3. W. N. McKay.....	Manager, Bank of Hamilton. Atwood, Ont.	
3. H. L. McKinnon, B.A.Sc.....	With the Brown Hoisting Machine Cleveland, O.	Co.
1. W. W. Meadows, D. & O.L.S....	Dept. of Public Works. Maple Creek, Sask.	
1. F. J. Robinson, D. & O.L.S....	Deputy Commissioner of Public Regina, Sask.	Works, Saskatchewan.
3. F. T. Stocking.....	With Pike's Peak Power Co. Victor, Col.	
3. R. C. C. Tremaine, B.A.Sc.....	(Deceased.)	

*Diploma with honours.

1896.

Course.	Name and address.	Occupation.
2.*J. W. Bain, B.A.Sc.....	Toronto, Ont.	Associate Professor of Applied Chemistry, University of Toronto.
2. L. T. Burwash.....	Whitehorse, Y.T.	Mining Recorder.
3.*G. M. Campbell.....	Chicago, Ill.	Supt. Power Apparatus Shops, Western Electric Co.
2. J. A. Decew, B.A.Sc.....	14 Sun Life Building, Montreal, Que.	Consulting Chemical Engineer.
3.*H. P. Elliott, B.A.Sc., M.E....	Pittsburgh, Pa.	Electrical Engineer, Westinghouse Electric and Mfg. Co.
3. W. C. Gurney.....	Toronto, Ont.	Vice-President, Gurney Foundry Co., Limited.
3.*H. V. Haight, B.A.Sc.....	Sherbrooke, P.Q.	Chief Engineer, Canadian Rand Drill Co.
1. W. F. Laing (deceased).		
3. R. R. Lawrie (deceased).		
3. C. MacBeth, B.A.Sc.	Ottawa, Ont.	Assistant Engineer, Geo. Bay Ship Canal.
3. J. A. McMurchy.....	Pittsburgh, Pa.	Mechanical Engineer, Westinghouse Machine Co.
1. T. Martin, B.A.Sc.....	Calgary, Alta.	Asst. Divisional Engineer, C.P.R., Western Division.
3. R. R. Scheibe.....	Toronto, Ont.	With Toronto Engraving Co., Ltd.

1897.

2. E. Andrews, B.Sc.....	Portmadoc, N. Wales.	Res. Engineer, Maenofferen Slate Quarry Co., Limited.
2.*J. A. Bow.....	Anaconda, Mon.	Draftsman, Washoe Smelter.
1. H. S. Carpenter, B.A.Sc., O.L.S..	Regina, Sask.	District Surveyor & Engineer, Dept. of Public Works.
5. H. W. Charlton, B.A.Sc.....	Ottawa, Ont.	Assistant Chemist at Experimental Farm.
4.*E. A. Forward.....	A.M. Can. Soc. C.E., Lockport, Man.	Engineer-in-charge, St. Andrew's Lock and Dam.

*Diploma with honours.

1897—*Continued.*

Course.	Name and address.	Occupation.
3.*A.	T. Gray, B.A.Sc.....	With General Electric Co. Schenectady, N.Y.
3.	W. A. B. Hicks.....	With Lackawanna Steel Co. Buffalo, N.Y.
4.	C. F. King.....	Geological Survey of Canada. Hamilton, Ont.
1.	H. W. Proudfoot (deceased).	
2.*A.	H. A. Robinson, B.A.Sc....	Mining Inspector. Haileybury, Ont.
4.	W. F. Scott.....	Structural Engineer and Consulting Toronto, Ont. Architect.
3.*W.	R. Smiley, B.A.Sc.....	With Wellman-Seaver-Morgan En- Cleveland, Ohio. gineering Co.
2.*W.	W. Stull, B.A.Sc., O.L.S...	Surveyor and Mining Engineer. Sudbury, Ont.
1.*M.	B. Weekes, B.A.Sc., D.L.S...	Topographical Surveys Branch, Ottawa, Ont. Dept. of the Interior.
1.	E. A. Weldon.....	Provincial Land Surveyor's Office. Winnipeg, Man.

1898.

1.	W. H. Boyd, B.A.Sc.....	Geological Survey of Canada. Ottawa, Ont.
2.	W. E. H. Carter, B.A.Sc.....	Consulting Mining Engineer, Toronto, Ont. 85 Front Street East.
3.	E. H. Darling.....	With Hamilton Bridge Works Co. A.M. Can. Soc. C.E., Hamilton, Ont.
1.	W. F. Grant, B.A.Sc.....	Town Engineer. Sault Ste. Marie, Ont.
1.	J. S. Kormann, B.A.Sc.....	Manager, Kormann Brewing, Ltd. Toronto, Ont.
3.	J. E. Lavrock.....	Draftsman, Hermon & Burwell. Vancouver, B.C.
4.	D. Macintosh, B.A.Sc., B. Arch..	Firm of Hoyt & Macintosh, Baltimore, Md. Architects, 11 East Pleasant St.
1.	F. W. McNaughton, O.L.S....	Deputy Minister of Public Works. Winnipeg, Man.
1.	J. H. Shaw, O.L.S.....	Surveyor and Engineer. North Bay, Ont.

1898—Continued.

Course.	Name and address.	Occupation.
3. A. E. Shipley, B.A.Sc.....	Manager, Nelson Coke & Gas Co. Nelson, B.C.	
3.*F. C. Smallpiece, B.A.Sc.....	With Canadian General Electric Co. Toronto, Ont.	
1. R. W. Smith, P.L.S.....	Surveyor. Revelstoke, B.C.	
1.*J. A. Stewart, M.A.....	Estimating and Designing Dept., Rankin, Pa. McClintic-Marshall Construction Co.	
1.*H. L. Vercoe.....	Chief Draftsman, Montreal, Que. Grand Trunk Pacific Ry.	
3. T. A. Wilkinson.....	Assistant Statistician, Westinghouse New York, N.Y. Church Kerr Co.	
3. D. A. Williamson, B.A.Sc.....	With Hamilton Bridge Works Co. Hamilton, Ont.	

1899.

3.*T. Barber	Hydraulic Engineer, Meaford, Ont. Georgian Foundry.	
2. J. T. M. Burnside, B.A.Sc.....	Chief of Location, Canton, China. Canton Hankow Ry.	
3. L. B. Chubbuck, B.A.Sc.....	Engineering Dept., Westinghouse Pittsburgh, Pa. Electric and Mfg. Co.	
2. G. A. Clothier.....	Engineer, Le Roy Mining Co. Rossland, B.C.	
1. C. Cooper	Surveyor. Carlyle, Sask.	
2. R. W. Coulthard, B.A.Sc.....	Mining Engineer, Crow's Nest Pass Ferne, B.C. Coal Co.	
3. J. A. Craig, B.A.Sc.....	Office of Delano-Osborne Engineering Toronto, Ont. Co.	
2. J. C. Elliott.....	Kelso, Ont.	
3. W. E. Foreman, B.A.Sc.....	Construction Dept., Westinghouse Pittsburgh, Pa. Electric and Mfg. Co.	
3. E. Guy, B.A.Sc.....	Engineering Dept., Westinghouse Industry, Pa. Electric and Mfg. Co.	
3.*W. Almon Hare, B.A.Sc.....	Secy.-Treas. and Chief Engineer, A.M. Can. Soc. C.E., The Standard Engineering Co. Toronto, Ont.	

*Diploma with honours.

1899—Continued.

Course.	Name and address.	Occupation.
1. R. Latham, B.A.Sc.....	Asst. Engineer, T. H. & B. Ry. Hamilton, Ont.	
3. W. Monds, B.A.Sc.....	Firm of Connor, Clark & Monds, 36 Toronto St., Toronto, Ont.	Consulting Engineers.
3. A. S. H. Pope, B.A.Sc.....	Electrical Eng. Dept., Westinghouse Pittsburgh, Pa.	Electric and Mfg. Co.
1. J. Patterson, B.A.....	Professor of Physics, Muir Central Allahabad, India.	College.
2.*G. E. Revell, B.A.Sc.....	Nelson, B.C.	
3.*E. Richards, B.A.Sc.....	Asst. Engineer, Hydro-Electric Power Toronto, Ont.	Commission.
3. G. A. Saunders.....	With Westinghouse Electric & Mfg. Wilkesburg, N.Y.	Co.
1.*T. Shanks, B.A.Sc., D.L.S.....	Topographical Surveys Branch, Ottawa, Ont.	Dept. of the Interior.
1.*D. C. Tennant, B.A.Sc.....	With Dominion Bridge Co. Montreal, P.Q.	
3. W. W. VanEvery.....	Somerville & Van Every, Federal Life Bldg., Hamilton, Ont.	Consulting Engineers.
2. G. H. Watt, D.L.S.....	Dominion Land Surveyor. Ottawa, Ont.	
3. W. E. Wagner, B.A.Sc.....	Constructing Engineer, East Alton, Ill.	Equitable Powder Mfg. Co.
3. E. Yeates	London Machine Tool Co. London, Ont.	

1900.

1. J. L. Allan.....	Office of Provincial Engineer. A.M. Can. Soc. C.E., Halifax, N.S.	
2. E. G. R. Ardagh, B.A.Sc.....	Lecturer in Applied Chemistry, Toronto, Ont.	University of Toronto.
3. J. A. Bain.....	Structural Engineer, Dept. of Public Ottawa, Ont.	Works of Canada.
3. J. H. Barley, B.A.Sc.....	Canadian Westinghouse Co. Hamilton, Ont.	

*Diploma with honours.

1900—Continued.

Course.	Name and address.	Occupation.
2.*M. C. Boswell, M.A., Ph.D.....	Lecturer in Organic Chemistry, Toronto, Ont.	University of Toronto.
1 L. T. Bray, D. & O.L.S.....	Surveyor. Amherstburg, Ont.	
3. J. Clark	Electrician, Pittsburgh, Pa.	P. & L. E. R. R.
2. J. E. Davison, B.A.Sc.....	Engineering Staff, Can. Northern Ry. Toronto, Ont.	
3. E. D. Dickinson.....	With General Electric Co. Schenectady, N.Y.	
3. G. W. Dickson, B.A.Sc.....	With Robertson Machinery Co. Welland, Ont.	
2.*H. A. Dixon, B.A.Sc., M.L.S...	Engineering Staff, Winnipeg, Man.	Can. Northern Ry.
2. C. H. Fullerton, O.L.S.....	Engineer and Surveyor. New Liskeard, Ont.	
3. W. S. Guest, B.A.Sc.....	Demonstrator in Electrical Engineer- ing, University of Toronto.	
3. W. Hemphill, B.A.Sc.....	General Foreman, Cataract Power & 718 Fidelity Building, Buffalo, N.Y.	Conduit Co.
3. S. E. M. Henderson.....	Designing Engineer, Schenectady, N.Y.	General Electric Co.
3. J. A. Henry.....	Designing Engineer, Schenectady, N.Y.	General Electric Co.
2. H. S. Holcroft, B.A.Sc., D.L.S...	Surveyor. Toronto, Ont.	
3. H. A. Johnston.....	Manager, Johnston Oil Engine Co., 33 Golden Ave., Toronto, Ont.	Limited.
3 J. C. Johnston.....	Plant Inspector, Boston, Mass.	Warren Bituminous Paving Co.
2.*J. A. Johnston, B.A.Sc.....	Contractor. Ignace, Ont.	
2. R. E. McArthur.....	Resident Engineer, C.P.R. Calgary, Alta.	
2. J. G. McMillan, B.A.Sc.....	Mining Engineer. 39 Wood St., Toronto, Ont.	

*Diploma with honours.

1900—Continued.

Course.	Name and address.	Occupation.
3. L. Haun Miller.....	Interstate Engineering Co. Cleveland, O.	
2. E. V. Neelands, B.A.Sc.....	Resident Manager, Black Queen Crystal, Colo.	Mining and Reduction Co.
1.*E. H. Phillips, D.L.S.....	Dept. of Public Works. Regina, Sask.	
2. J. R. Roaf, B.A.Sc.....	Draftsman, Crow's Nest Pass Coal Co. Michel, B.C.	
3.*C. H. E. Rounthwaite.....	Draftsman, G.T.P. Ry. Fort William, Ont.	
2. H. W. Saunders, B.A.Sc.....	Chief Draftsman, Gary, W. Va.	U. S. Coal & Coke Co.
1. A. Taylor, D.L.S. & M.L.S.....	Engineer and Surveyor. Winnipeg, Man.	
1. W. C. Tennant, B.A.Sc.....	(Deceased.)	
2. S. M. Thorne, B.A.Sc.....	Engineering Staff, Clifton, Arizona.	Arizona Copper Co.
1. F. W. Thorold, B.A.Sc.....	Consulting Engineer. Calgary, Alta.	
1. H. M. Weir, B.A.Sc.....	With Londonderry Iron & Mining Co. Londonderry, N.S.	
3. F. D. Withrow.....	Patent Examiner, Ottawa, Ont.	Dept. of Agriculture.

1901.

1. R. H. Barrett, B.A.Sc., O.L.S...	(Deceased.)	
3. W. G. Beatty	Manager, Beatty Bros., Implement Fergus, Ont.	Manufacturers.
3. G. M. Bertram.....	Representative of the Sullivan Ma- Scranton, Pa.	chinery Co.
3. W. J. Bowers (deceased).		
3. E. T. J. Brandon, B.A.Sc.....	Chief Draftsman, Hugh L. Cooper, 60 Wall St., New York.	Consulting Engineers.
3. W. P. Brereton, B.A.Sc.....	Asst. Engineer, Winnipeg, Man.	Power Construction Dept.
3. J. T. Broughton.....	Chief Engineer, Scottdale, Pa.	Scottdale Foundry & Machine Co.

*Diploma with honours.

1901—Continued.

Course.	Name and address.	Occupation.
3.*W. G. Chace, B.A.Sc.....	Firm of Smith, Kerry & Chace. Confed. Life Bldg., Toronto, Ont.	
3. A. G. Christie.....	Chief Engineer, Western Canada Exshaw, Alta.	Cement & Coal Co.
3. J. R. Cockburn, B.A.Sc.....	Lecturer in Descriptive Geometry, Toronto, Ont.	University of Toronto.
1. W. A. Duff.....	Chief Draftsman, Bridge Dept., Ottawa, Ont.	National Transcontinental Ry.
2.*D. E. Eason, B.A.Sc.....	Division Engineer, Peterboro, Ont.	Trent Valley Canal.
1.*S. Gagné, B.A.Sc.....	Engineer-in-Charge, Toronto and A.M. Can. Soc. C.E., 23 Scott St., Toronto, Ont.	Niagara Power Co., Toronto, Niagara & Western Ry., etc.
3. N. R. Gibson, B.A.Sc.....	Asst. Engineer, Winnipeg, Man.	Power Const. Dept.
1. C. Harvey, B.A.Sc., D.L.S.....	Consulting Engineer and Surveyor. Kelowna, B.C.	
2. A. T. E. Hamer.....	Engineering Staff, Wahnapitae, Ont.	Can. Northern Ry. Co.
2. F. C. Jackson.....	Res. Engineer, Temiskaming and North Bay, Ont.	Northern Ontario Ry.
3.*A. Laidlaw	District Manager, Trussed Concrete Kansas City, Mo.	Steel Co.
3. W. C. Lumbers.....	Engineering Staff, C.P.R. Calgary, Alta.	
3. A. C. Macdougall.....	Asst. Superintendent, Massena, N.Y.	Aluminium Co. of America.
3. A. T. C. McMaster, B.A.Sc....	Assistant Engineer, Clifton, Arizona.	Arizona Copper Co.
1. G. MacMillan	Topographical Surveys Branch, Ottawa, Ont.	Dept. of Interior.
3.*H. G. McVean, B.A.Sc.....	Engineering Staff of W. Chipman, Prince Albert, Sask.	C.E.
2. W. C. Matheson.....	With McKenzie, Mann Co. Toronto, Ont.	
3. H. T. Middleton.....	With New York Glucose Co. Edgewater, N.Y.	
2. J. L. R. Parsons, B.A., D.L.S...	Engineer and Surveyor. Winnipeg, Man.	

*Diploma with honours.

1901—Continued.

Course.	Name and address.	Occupation.
1. G. H. Power.....	Resident Engineer, Waterworks and Prince Albert, Sask.	Sewers.
3.*H. W. Price, B.A.Sc.....	Lecturer in Electrical Engineering, Toronto, Ont.	University of Toronto.
1. H. P. Rust, B.A.Sc.....	Assistant Engineer, Electrical De- A.M. Can. Soc. C.E., Niagara Falls, Ont.	velopment Co.
3. M. V. Sauer, B.A.Sc.....	Assistant Engineer, Niagara Falls, Ont.	Ontario Power Co.
3. W. H. Stevenson, B.A.Sc.....	Sales Mgr., Alex. Hodgart Machy. & Chicago, Ill.	Supply Co.
1. R. D. Willson.....	Asst. City Engineer. Winnipeg, Man.	

1902.

3.*H. G. Barber.....	Topographical Surveys Branch, Ottawa, Ont.	Department of the Interior.
1. W. J. Blair, B.A.Sc., D. & O.L.S.	Civil Engineer and Surveyor. New Liskeard, Ont.	
3. J. M. Brown.....	With Westinghouse Machine Co., Pittsburgh, Pa.	Steam Turbine Dept.
2. W. G. Campbell.....	Toronto, Ont.	
2. A. R. Campbell.....	Manager, The Saskatoon Const. & Saskatoon, Sask.	Engineering Co.
3. C. G. Carmichael.....	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
2.*W. Christie, B.A.Sc.....	Asst. to H. W. Selby, D.L.S. Markerville, Alta.	
2. F. T. Conlon.....	Welland Canal Engineering Staff. Thorold, Ont.	
3. H. V. Connor.....	With Westinghouse Electric and Mfg. Pittsburgh, Pa.	Co.
2.*M. T. Culbert.....	Manager, O'Brien Mine. Cobalt, Ont.	
2. R. Cumming	General Contractor, Toronto, Ont.	50 Front St. E.
1. W. E. Douglas, B.A.....	Secy.-Treas., J. H. McKnight Con- Toronto, Ont.	struction Co.

*Diploma with honours.

1902—Continued.

Course.	Name and address.	Occupation.
3.*R. J. Dunlop.....	With Canadian Westinghouse Co. Toronto, Ont.	
2. W. M. Edwards, B.A.Sc.....	H. L. Cooper, Consulting Engineer. 60 Wall St., New York.	
3. W. Elwell	Topographical Surveys Branch, Ottawa, Ont.	Department of the Interior.
2. J. M. Empey, B.A.Sc., D.L.S....	Dist. Engineer and Surveyor. Calgary, Alta.	
2.*D. L. H. Forbes.....	Asst. General Manager, New England Clifton, Arizona.	& Clifton Copper Co.
1.*A. E. Gibson, B.A.Sc.....	Office of Haney & Miller, Toronto, Ont.	Engineers and Contractors.
3. A. C. Goodwin.....	Draftsman, Pittsburgh, Pa.	Aluminium Co. of America.
3. C. P. Henwood.....	Draftsman, Middleton, Pa.	National Tube Co.
3. D. M. Johnston.....	Manager, Volta Electric Repair Toronto, Ont.	Works.
2. R. H. Knight, B.A.Sc., D.L.S....	Driscoll & Knight, Edmonton, Alta.	Engineers and Surveyors.
5.*F. L. Langmuir, B.A.Sc., Ph.D....	Chemist, M. Langmuir Mfg. Co. Toronto, Ont.	
3. A. H. McBride, B.A.Sc.....	Assistant Engineer, Hydro- Toronto, Ont.	Electric Power Commission.
1. A. L. McLennan, D.L.S.....	Office of J. McDougall, C.E., Toronto, Ont.	York Co. Engineer.
3. J. T. Mackay.....	Student in Faculty of Medicine, Toronto, Ont.	University of Toronto.
3. J. F. S. Madden.....	Erecting Engineering Dept., Toronto, Ont.	Can. Gen. Electric Co.
3.*C. H. Marrs.....	Designing Dept., Pittsburgh, Pa.	Riter-Conley Mfg. Co.
3. P. Mathison, B.A.Sc.....	With Westinghouse Electric and Mfg. Pittsburgh, Pa.	Co.
3. R. S. Mennie.....	With Crucible Steel Co. of America. Pittsburgh, Pa.	
2. H. H. Moore, D.L.S.....	Dominion Land Surveyor and En- Calgary, Alta.	gineer.

*Diploma with honours.

1902—Continued.

Course.	Name and address.	Occupation.
1.*T. S. Nash.....	Topographical Surveys Branch, Ottawa, Ont.	Department of the Interior.
1. G. G. Powell, B.A.Sc.....	Asst. to General Manager, Toronto, Ont.	Constructing and Paving Co.
1.*W. F. Ratz, D.L.S.....	International Boundary Commission, Ottawa, Ont.	Department of the Interior.
3. H. D. Robertson, B.A.Sc.....	Haney & Miller, Toronto, Ont.	Engineers and Contractors.
3.*D. Sinclair, B.A.Sc.....	Sinclair & Smith, New Liskeard, Ont.....	Engineers and Surveyors.
2.*I. J. Steele.....	Locating Engineer, Transcontinental Ottawa, Ont.	Ry.
3. W. H. Sutherland, B.A.Sc.....	Assistant Engineer, Montreal, Que.	Montreal Water and Power Co.
3.*T. F. Taylor.....	Engineering Dept., Can. Foundry Co. Toronto, Ont.	
2.*C. M. Teasdale.....	Surveyor. Moosehorn Bay, Man.	
3. A. A. Wanless.....	Shop Supt., Nova Scotia Steel and Sydney Mines, N.S.	Coal Co.
3. H. J. Zahn, B.A.Sc.....	With Bollinger Bros., Pittsburgh, Pa.	Contracting Engineers.

1903.

3. H. G. Acres.....	Asst. Engineer, Hydro-Electric Toronto, Ont.	Power Commission.
1. J. G. R. Alison.....	With Riter-Conley Mfg. Co. Pittsburgh, Pa.	
3.*H. H. Angus, B.A.Sc.....	With Westinghouse Machine Co. East Pittsburgh, Pa.	
3. J. A. Beatty.....	Dominion Eng. & Construction Co. Peterborough, Ont.	
3.*J. Breslove	Steam Turbine Engineer, Westing- East Pittsburgh, Pa.	house Machine Co.
2. J. H. Burd, O.L.S.....	Engineer and Surveyor. Sudbury, Ont.	
1.*E. L. Burgess, D.L.S.....	Topographical Surveys Branch, Ottawa, Ont.	Department of the Interior.

*Diploma with honours.

1903—Continued.

Course.	Name and address.	Occupation.
2. N. A. Burwash, B.A.Sc.....	Surveyor. Whitehorse, Y.T.	
1. F. F. Clarke, D. & O.L.S.....	With Mackenzie, Mann & Co. Toronto, Ont.	
2. C. L. Coulson.....	Engineering Dept. of the McCall's McCall's Ferry, Pa.	Ferry Power Co.
3.*A. E. Davison, B.A.Sc.....	Engineering Staff, Niagara Falls Niagara Falls, N.Y.	Hydraulic Power & Mfg. Co.
3. C. J. Fensom, B.A.Sc.....	Consulting Mechanical Engineer, Toronto, Ont.	43 Victoria St.
2.*E. O. Fuce, O.L.S.....	Resident Engineer, Galt, Ont.	Galt Sewerage System.
3.*F. A. Gaby, B.A.Sc.....	Hydro-Electric Power Commission. Toronto, Ont.	
3. R. E. George.....	Electrical and Gas Engineer, Dover, N.H.	The United Gas & Electric Co.
1. J. C. Gardner, B.A.Sc.....	Railway Engineer. Arica, Chili.	
1.*P. Gillespie, B.A.Sc.....	Lecturer in Theory of Construction, Toronto, Ont.	University of Toronto.
1. W. A. Gourlay.....	Engineering Staff, C.P.R. Toronto, Ont.	
2. J. F. Hamilton, B.A.Sc., C.E....	Hamilton & Young, Dominion Land Lethbridge, Alta.	Surveyors and Engineers.
2. G. S. Hanes, B.A.Sc., O.L.S.....	City Engineer. Windsor, Ont.	
5.*J. A. Horton.....	Horton & Cope, Patent Attorneys Toronto, Ont.	and Consulting Engineers.
2. F. Y. Harcourt, B.A.....	Ontario Niagara Falls Power Co. Niagara Falls, Ont.	
1. L. J. Hayes.....	Trussed Concrete Steel Co., Detroit, Mich.	Wayne County Bank Building.
1.*F. D. Henderson.....	Topographical Surveys Branch, Ottawa, Ont.	Department of the Interior.
3. J. G. Jackson.....	Engineering Department, 55 Duane St., New York, N.Y.	New York Edison Co.
3. C. K. Johnston.....	Merchant. Pefferlaw, Ont.	

*Diploma with honours.

1903—Continued.

Course.	Name and address.	Occupation.
1. H. Johnston, O.L.S.....	Davis & Johnston, Berlin, Ont.	Civil Engineers and Surveyors.
3. A. G. Lang.....	George St., Toronto.	
1.*A. J. Latornell, B.A.Sc.....		
1.*H. J. McAuslan, B.A.Sc., O.L.S..	Staff of T. & N. O. Ry. North Bay, Ont.	
3. J. A. McFarlane, B.A.Sc.....	Hamilton Bridge Works Co. Hamilton, Ont.	
1.*A. L. McNaughton.....	Topographical Surveys Branch, Ottawa, Ont.	Department of the Interior.
5.*F. G. Marriott, B.A.Sc.....	Chemist and Supt., Asphalt Plant, Toronto, Ont.	City Testing Laboratory.
3.*C. A. Maus.....	Paris, Ont.	
3.*M. L. Miller.....	Draftsman, McClintic-Marshall Con- struction Co. Pottstown, Pa.	
3. P. H. Mitchell.....	Municipal Power Department. Winnipeg, Man.	
2.*R. H. Montgomery, B.A.Sc., D.L.S..	Hydrographic Surveys Branch. Ottawa, Ont.	Dept. of Marine and Fisheries.
1. F. A. Moore.....	Toronto, Ont.	
3. E. E. Mullins.....	Baldwin Locomotive Works. Philadelphia, Pa.	
3. I. H. Nevitt, B.A.Sc.....	Construction, Bell Telephone Co. Toronto, Ont.	
1. E. W. Oliver, B.A.Sc.....	Asst. to Chief Engineer Eastern Lines, Toronto, Ont.	Mackenzie, Mann Ry. System.
3. J. P. Oliver.....	Riter-Conley Mfg. Co. Pittsburgh, Pa.	
3. J. D. Pace, B.A.Sc.....	Construction Engineer, Montreal, Que.	Canadian Westinghouse Co.
3. B. B. Patten, B.A.Sc.....	St. George, Ont.	
2. D. H. Philp.....	Georgian Bay Canal Survey. Ottawa, Ont.	
3.*J. H. Pinkney.....	National Tube Dept., Elyria, O.	U.S. Steel Corporation.

*Diploma with honours.

1903—Continued.

Course.	Name and address.	Occupation.
2. T. H. Plunkett, B.A.Sc.....	Fellow in Drawing, Toronto, Ont.	University of Toronto.
1.*H. L. Seymour.....	Dominion Land Surveyor. Edmonton, Alta.	
3.*H. M. Scheibe, B.A.Sc.....	Student apprentice, Westinghouse Pittsburgh, Pa.	Electric & Mfg. Co.
1. J. H. Smith, D. & O.L.S.....	Sinclair & Smith, New Liskeard, Ont.	Engineers and Surveyors.
3. H. G. Smith, B.A.Sc.....	(Deceased.)	
3. S. L. Trees, B.A.Sc.....	Supt. Mfg. Dept., Samuel Trees & Co., Toronto, Ont.	42 Wellington St. East.
2. J. E. Umbach.....	Topographical Surveys Branch, Ottawa, Ont.	Department of the Interior.
1. J. Waldron, D.L.S.....	Engineer and Surveyor. Moose Jaw, Sask.	
3.*S. B. Wass.....	Resident Engineer, Construction Walkerton, Ont.	Dept., C.P.R.
3. J. A. Whelihan.....	Edison Storage Battery Co. Glen Ridge, N.J.	
3. H. F. White.....	Construction Engineer, Toronto, Ont.	Can. Foundry Co.
2.*C. G. Williams, B.A.Sc.....	Representing Max Erfurt Sizing Sun Life Building, Montreal, Que.	Patents.
1.*N. D. Wilson, B.A.Sc.....	Staff of C.P.R. Saskatoon, Sask.	
1.*C. R. Young, B.A.Sc.....	Lecturer in Applied Mechanics, Toronto, Ont.	University of Toronto.

1904.

3.*J. H. Alexander, B.A.....	Hamilton Bridge Co. Hamilton, Ont.
3 *J. H. Barrett.....	With the Wm. Davies Co., Ltd. Toronto, Ont.
3. M. B. Bonnell.....	Bobcaygeon, Ont.
3. T. D. Brown, B.A.Sc.....	With Alamo Gas Engine Works, Hillsdale, Mich.

*Diploma with honours.

1904—Continued.

Course.	Name and address.	Occupation.
3. F. W. Burnham, B.A.Sc.....	Construction Dept., Montreal, P.Q.	Allis-Chalmers-Bullock Co.
3. J. W. Calder, B.A.Sc.....	With Deloro Mining & Reduction Co. Deloro, Ont.	
1. A. J. Campbell, B.A.Sc.....	Demonstrator in Drawing, Toronto, Ont.	University of Toronto.
1. N. C. Cameron.....	Dominion Engineering and Construc- Montreal, Que.	tion Co.
3.*A. M. Campbell, B.A.Sc.....	Erection Foreman, Glen Lyn, Va.	McClintie-Marshall Const. Co.
4. J. B. Challies.....	Hydraulic Engineer, Ottawa, Ont.	Department of the Interior.
2. C. A. Chilver.....	Asst. to C. C. Fairchild, D.L.S. Calgary, Alta.	
2. H. L. Chilver.....	Topographical Surveys Branch, Ottawa, Ont.	Department of the Interior.
1. U. W. Christie, B.A.Sc., O.L.S..	Chesley, Ont.	
2. P. C. Coates, B.A.Sc.....	Mining Engineer. Cobalt, Ont.	
1. S. B. Code.....	Town Engineer. Smith's Falls, Ont.	
1.*T. F. Code, B.A.Sc.....	(Deceased.)	
1.*W. A. Cowan.....	Resident Engineer, C.P.R. Toronto, Ont.	
3.*S. E. Craig	With Manson Mfg. Co. Thorold, Ont.	
1.*S. R. Crerar, B.A.Sc., O.L.S....	Demonstrator in Surveying, Toronto, Ont.	University of Toronto.
3. W. M. Currie.....	Chief Inspector and Engineer, Hamilton, Ont.	Hamilton Steel and Iron Co.
3. H. H. Depew.....	Supt., Crow's Nest Pass Electric Ferne, B.C.	Light and Power Co.
2. A. J. Elder.....	Topographical Surveys Branch, Ottawa, Ont.	Department of the Interior.
2. J. G. Fleck.....	Lumber Merchant. Madawaska, Ont.	
1.*A. L. Ford, B.A.Sc.....	Civil Engineer. Eglinton, Ont.	

*Diploma with honours

1904—Continued.

Course.	Name and address.	Occupation.
3.	W. S. Gibson, B.A.Sc..... New York, N.Y.	Asst. Supt., The Dale Co.
1.	J. P. Gordon..... Toronto, Ont.	Engineering Staff, Willis Chipman, C.E.
3.	W. W. Gray, B.A.Sc..... Toronto, Ont.	Demonstrator in Thermodynamics, University of Toronto.
1.	A. Gray, B.A.Sc..... Port Credit, Ont.	With St. Lawrence Starch Co.
3.	W. K. Greenwood, B.A.Sc..... St. Catharines, Ont.	Draftsman, Welland Canal Office.
1.	L. D. Hara..... St. Catharines, Ont.	Asst. Engineer, Welland Canal Co.
3.	C. J. Harris, B.A.Sc..... Brantford, Ont.	With Brantford Screw Co.
1.	J. B. Heron, B.A.Sc..... Wahnapitae, Ont	Resident Engineer, Can. Northern Ry.
1	E. M. M. Hill..... Guelph, Ont.	Engineering Staff, Canadian Northern Railway.
2.	S. N. Hill..... Ottawa, Ont.	Topographical Surveys Branch, Department of the Interior.
2.	C. J. Ingles..... Toronto, Ont.	Office of Willis Chipman, C.E., Consulting Engineer.
1.	E. A. James, B.A.Sc..... Toronto, Ont.	Editorial Staff, Canadian Engineer.
1.	P. V. Jermyn, B.A.Sc..... 118 King St. West, Toronto, Ont.	C.P.R. Construction Dept.
3.	W. S. H. Keefe..... Fort Covington, N.Y.	Manager, Light, Heat and Power Co.
3.	W. J. Larkworthy..... Buffalo, N.Y.	President, The Electric Navigation Co.
3.	O. B. McCuaig, B.A.Sc..... Toronto, Ont.	Wyse & Middlemist, 43 Janes Building.
1.	G. G. McEwen, B.A.Sc..... Winchester, Ont.	Office of T. H. Dunn, O.L.S.
1.*	W. G. McFarlane, B.A., B.A.Sc.. Toronto, Ont.	Engineer and Surveyor.
3.*	C. P. McGibbon, B.A..... East Pittsburgh, Pa.	With Westinghouse Electric and Mfg. Co.
3.	C. McKay, B.A.Sc.....	(Deceased.)

*Diploma with honours.

1904—Continued.

Course.	Name and address.	Occupation.
1. D. McMillan.....	Woodville, Ont.	
3. G. J. Manson.....	With Manson Mfg. Co., Ltd. Thorold, Ont.	
1.*W. N. Moorhouse.....	Office of Sproatt & Rolph, Architects. Toronto, Ont.	
3. E. E. Moore.....	Engineer, Inter-State Iron Co. Glen Falls, N.Y.	
3. W. H. Munro.....	McDougall & McRae. Ottawa, Ont.	
3. G. Pace, B.A.Sc.....	Construction Engineer, Canadian Toronto, Ont. Westinghouse Co.	
3 W. S. Pardoe, B.A.Sc.....	Hydraulic Engineer, Toronto, Ont. Canada Foundry Co.	
3. J. Paris	Inspector, Temiskaming & Northern North Bay, Ont. Ontario Railway.	
2. J. Parke, B.A.Sc.....	Chemist and Assayer. Cobalt, Ont.	
3. W. J. Peaker.....	Draftsman, No. 1 Location Party, North Bay, Ont. T. & N. O. Ry.	
3.*A. E. Pickering.....	Draftsman, Lake Superior Power Co. Sault Ste. Marie, Ont.	
1. D. L. C. Raymond, B.A.Sc.....	Manager, The Concrete Engineering Toronto, Ont. and Construction Co., Ltd.	
1. F. B. Reid, B.A.Sc.....	Dept. of the Interior. Ottawa, Ont.	
3.*M. R. Riddell, B.A.Sc.....	Lecturer in Mechanical Engineering, Toronto, Ont. University of Toronto.	
3. G. S. Roxburgh, B.A.Sc.....	Manager, Fetherstonhaugh & Co., Winnipeg, Man. Patent Solicitors and Engineers.	
2. F. N. Rutherford, B.A.Sc.....	General Manager, Concrete Pole Co. St. Catharines, Ont.	
1.*J. D. Sheply, B.A.Sc., D.L.S....	Dist. Surveyor and Engineer. N. Battleford, Sask.	
3. F. W. Slater, B.A.Sc.....	With General Electric Co. Schenectady, N.Y.	
3.*R. S. Smart.....	Manager, Fetherstonhaugh & Co., Ottawa, Ont. Patent Solicitors and Engineers.	
1. D. A. Smith.....	Post-Graduate Course in Engineer- Toronto, Ont. ing, University of Toronto.	

*Diploma with honours.

1904—Continued.

Course.	Name and address.	Occupation.
3. W. J. Smither, B.A.Sc.....	Manager, Seattle Office of Abner Seattle, Wash.	Doble Co.
3. S. E. Thomson, B.A.Sc.....	Engineering Staff, Niagara Falls, Ont.	Electrical Development Co.
3. C. J. Townsend, B.A.Sc.....	With Arnold Co., Engineers and Con- Chicago, Ill.	structors.
1. D. T. Townsend, B.A.Sc., O.L.S. C.P.R.	Land Department. Winnipeg, Man.	
1. A. V. Trimble, B.A.Sc.....	With Mackenzie, Mann & Co. Toronto, Ont.	
3. B. B. Tucker, B.A.Sc.....	Resident Engineer of The Canada Tin Morrisburg, Ont.	Plate and Sheet Steel Co., Ltd.
2.*E. Wade, B.A.....	Demonstrator in Mining, Toronto, Ont.	University of Toronto.
1.*E. W. Walker, B.A.Sc.....	Dept. of Public Works. Regina, Sask.	
3. J. P. Watson, B.A.Sc.....	Draftsman, Motive Power Dept., Montreal, Que.	C. P. Ry.
1. J. M. Weir.....	Engineering Staff, G. T. Ry. Hamilton, Ont.	
1.*A. F. Wells, O.L.S., B.A.Sc....	Engineering Dept., Toronto, Ont.	Trussed Concrete Steel Co.
1. W. R. Worthington, B.A.Sc....	Asst. Sewer Engineer, Toronto, Ont.	Staff of City Engineer.
3. W. F. Wright.....	District Engineer, Schenectady, N.Y.	General Electric Co.

1905.

2 H. W. Arens (deceased).	
3. R. H. Armour.....	Westinghouse Electric & Mfg. Co. Pittsburgh, Pa.
3.*C. B. Aylesworth.....	
	Toronto, Ont.
1.*W. Barber, B.A.Sc.....	
	Toronto, Ont.
2.*W. A. Begg, B.A.Sc.....	Fellow in Drawing, Toronto, Ont.
	University of Toronto.
3.*G. G. Bell.....	Student, Faculty of Applied Science. Toronto, Ont.

*Diploma with honours.

1905—Continued.

Course.	Name and address.	Occupation.
1. J. C. Boeckh.....	Toronto, Ont.	
3. W. M. Bristol.....	Canadian Westinghouse Co. Montreal, Que.	
2. W. C. Campbell.....	Mining Engineer. Keene, Ont.	
3. W. R. Carson.....	Power and Plant Engineer, Taylor High Bridge, N.J.	Iron and Steel Co.
1. A. V. Chase.....		
3. S. R. A. Clement.....	With General Electric Co. Schenectady, N.Y.	
3. T. E. Corrigan.....	Chicago Edison Co. 88 Market St., Chicago.	
1.*N. L. R. Crosby, B.A.Sc.....	Estimating Dept., Rankin, Pa.	McClintic-Marshall Const. Co.
1. G. H. Ferguson, B.A.Sc.....	Fellow in Surveying, Toronto, Ont.	University of Toronto.
3. H. S. Fierheller, B.A.Sc.....	Demonstrator in Electricity, Toronto, Ont.	University of Toronto.
3. F. W. Harrison.....	Draftsman, Brooklyn Edison Co. Brooklyn, N.Y.	
1. M. C. Hendry.....	Engineering Staff, T. & N. O. Ry. North Bay, Ont.	
2. C. S. L. Hertzberg.....	Transitman, Montreal, Que.	C.P.R. Engineering Staff.
3. W. G. Hewson.....	Westinghouse Electric & Mfg. Co. Pittsburgh, Pa.	
1. G. S. Jones.....	Smith's Falls, Ont.	
3.*G. Kribs	Construction Engineer, Montreal, Que.	Canadian Westinghouse Co.
1. A. Latonnell, B.A.Sc.....	Sewer Dept., City Hall. Toronto, Ont.	
3. J. W. Leighton.....	Secretary, Evans Rotary Engine Co. Toronto, Ont.	
1.*T. R. Loudon, B.A.Sc.....	Lecturer in Drawing, Toronto, Ont.	University of Toronto.
3. S. E. McGorman.....	Draftsman, Walkerville, Ont.	Canadian Bridge Co.
1.*W. W. McGregor (deceased).		

*Diploma with honours,

1905—*Continued.*

Course.	Name and address.	Occupation.
2. D. W. McKenzie.....	Draftsman, Engineering Dept., Winnipeg, Man.	C. N. Ry.
3.*C. A. McLean.....	Canadian Westinghouse Co. Toronto, Ont.	
3. R. W. Moffatt, B.A.Sc.....	Fellow in Drawing, Toronto, Ont.	University of Toronto.
3. L. W. Morden.....	Canadian Westinghouse Co. Montreal, Que.	
3. G. R. Munro, B.A.Sc.....	Demonstrator in Drawing, Toronto, Ont.	University of Toronto.
3.*W. G. Nicklin, B.A.Sc.....	Grand Rapids Veneer Works. 151 Watson St., Grand Rapids, Mich.	
1.*B. B. Patten, B.A.Sc.....	St. George, Ont.	
1. E. P. A. Phillips, B.A.Sc.....	Town Engineer. Bracebridge, Ont.	
1. W. B. Porte.....	Staff of T. & N. O. Ry. Temagami, Ont.	
2. E. F. Pullen.....	Draftsman, Transcontinental R.R. Oakville, Ont.	Survey.
2. G. L. Ramsey, B.A.Sc.....	Toronto, Ont.	
3.*R. B. Ross.....	Engineer, International Marine Sig- nal Co. New York, N.Y.	
5. T. E. Rothwell, B.A.Sc.....	Fellow in Chemistry, Toronto, Ont.	University of Toronto.
2.*G. S. Scott.....	Geologist, with H. S. Scott, British New York, N.Y.	Consulate.
3. H. V. Serson.....	Engineering Dept., Hudson Com- panies. 111 Broadway, New York.	
3. C. H. Shirriff, B.A.Sc.....	Toronto, Ont.	
3.*C. E. Sisson.....	Engineering Dept., Can. Gen. Elec. Co. Peterboro, Ont.	
1. D. L. N. Stewart.....	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
1. M. A. Stewart.....	Asst. City Engineer, Roadway Dept., Toronto, Ont.	City Hall.

*Diploma with honours.

1905—*Continued.*

Course.	Name and address.	Occupation.
3.*W. F. Stubbs.....	Draftsman, Goldie & McCulloch Co. Galt, Ont.	
1. N. H. Sturdy.....	Designer, L. S. & M. S. Ry. Cleveland. O.	
1. W. G. Swan, B.A.Sc.....	Demonstrator in Strength of Ma- terials, University of Toronto. Toronto, Ont.	
1.*F. H. Sykes.....	Draftsman, National Transcontinental Railway. Nipigon, Ont.	
3. L. R. Thomson, B.A.Sc.....	Demonstrator in Drawing, University of Toronto. Toronto, Ont.	
3. E. D. Tillson.....	Post-Graduate Course in Engineering, University of Toronto. Toronto, Ont.	
1.*J. J. Traill, B.A.Sc.....	Demonstrator in Hydraulics, University of Toronto. Toronto, Ont.	
1.*W. M. Treadgold, B.A.....	Lecturer in Surveying, University of Toronto. Toronto, Ont.	
3. W. E. Turner, B.A.Sc.....	Leadville Light and Power Co. Leadville, Col.	
3. Uren, A. E.	Editorial Staff, Canadian Engineer. Toronto, Ont.	
3. J. M. Vaughan.....	Toronto-Niagara Power Co. Niagara Falls, Ont.	
1. H. L. Wagner, B.A.Sc.....	Toronto, Ont.	
2. W. H. Young, B.A.Sc., D.L.S...	Hamilton & Young, Dominion Land Surveyors and Engineers. Lethbridge, Alta.	

1906.

1. F. Alport	
3.*W. L. Amos.....	Engineering Apprentice, Hamilton, Ont. Can. Westinghouse Co.
1. A. H. Arens.....	Resident Engineer, Inverness, C.B. Inverness Ry. & Coal Co.
3.*J. C. Armer, B.A.Sc.....	Managing Editor, Toronto, Ont. "Canadian Machinery."
1. M. H. Baker, B.A.Sc.....	Asst. to District Engineer. Maple Creek, Sask.
3. F. W. Baldwin.....	With Graham Bell, Esq. Baddeck, N.S.

*Diploma with honours.

1906—Continued.

Course.	Name and address.	Occupation.
2. E. W. Banting, B.A.Sc.....	Toronto, Ont.	Fellow in Surveying, University of Toronto.
3. F. Barber	Toronto, Ont.	
2. M. Bates, B.A.Sc.....	Chatham, Ont.	
2. J. P. Bellisle (deceased).		
3.*H. H. Betts, B.A.Sc.....	Syracuse, N.Y.	With Westinghouse Elec. & Machine Co.
5.*D. E. Beynon.....	Toronto, Ont.	
2. G. W. Bissett.....	Midland, Ont.	With Canada Iron Furnace Co.
3. W. C. Blackwood.....	Toronto, Ont.	Fellow in Physics, University of Toronto.
3. H. E. Brandon, B.A.Sc.....	Cannington, Ont.	
1. M. E. Brian, B.A.Sc.....	Windsor, Ont.	
2. T. W. Brown.....	Toronto, Ont.	
1.*A. E. K. Bunnell, B.A.Sc.....	Toronto, Ont.	Asst. to Resident Engineer, C.P.R.
3. F. M. Byam.....	Wheeling, W.Va.	With The Riverside Bridge Co.
3. A. Cameron	Buffalo, N.Y.	Draftsman, Lackawanna Steel Co.
3. A. W. Campbell.....	Victoria Mines, Ont.	Electrician, Mond Nickel Co.
1. M. J. Carroll.....	Ottawa, Ont.	Topographical Surveys Branch, Department of the Interior.
3.*R. E. C. Chadwick.....	Toronto, Ont.	Fellow in Drawing, University of Toronto.
1.*G. T. Clark, B.A.....	Indian Head, Sask.	With John Galt, C.E. and M.E.
3.*G. A. Colhoun.....	Hamilton, Ont.	With The Hamilton Bridge Works Co., Ltd.
1.*W. A. M. Cook, B.A.Sc.....	Toronto, Ont.	Asst. to H. R. McEvoy, D.L.S.

*Diploma with honours.

1906—Continued.

Course.	Name and address.	Occupation.
1.*E. L. Cousins, B.A.Sc.....	Resident Engineer, G. T. Ry., Middle Toronto, Ont.	and Southern Division.
4. A. G. Creighton.....	Creighton & McConnell, Architects & Prince Albert, Sask.	Structural Engineers.
4. W. N. Daniels.....	With John R. Wiggins & Co. 1215 Filbert St., Philadelphia, Pa.	
3.*N. P. F. Death, B.A.Sc.....	Asst. Engineer to Chas. H. Mitchell, Toronto, Ont.	C.E., Consulting Engineer.
3. C. S. Dundass, B.A.Sc.....	Demonstrator in Electrical Engineer- Toronto, Ont.	ing, University of Toronto.
3. S. L. Fear.....	Toronto, Ont.	
5.*C. C. Forward.....	Asst. Chemist to Dr. John A. Miller. Buffalo, N.Y.	
5. C. W. Graham.....	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
1.*P. W. Greene.....	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
3. C. B. Hamilton, B.A.Sc.....	With Fairbanks-Morse Canadian Toronto, Ont.	Mfg. Co.
1.*A. L. Harkness.....	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
1.*R. L. Harrison.....	Resident Engineer, Cap Sante, P.Q.	Canadian Northern Ry.
1. E. Harrison	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
3. J. C. Hartney, B.A.Sc.....	Electrical Engineer, with Fether- Ottawa, Ont.	stonhaugh, Blackmore & Dennison.
1. A. B. Garrow.....	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
1. A. Gillies	With the Detroit River Tunnel Co. Windsor, Ont.	
1. G. W. Graham.....	Eugenia, Ont.	
3. C. S. Grasett.....	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
1. S. Hett, B.A.Sc.....	Sutton West, Ont.	
3. C. R. Hillis.....		

*Diploma with honours.

1906—Continued.

Course.	Name and address.	Occupation.
3. C. W. Hookway.....	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
3. R. H. Hopkins, B.A.Sc.....	Demonstrator in Electrical Engineer- ing, University of Toronto.	
1.*R. S. Houston.....	Emerson, Man.	
2.* W. Huber	Post-Graduate Course, School of Kingston, Ont.	Mining.
3.*A. H. Hull.....	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
3. W. C. Jepson	Staff of City Engineer. Edmonton, Alta.	
1.*C. Johnston, B.A.Sc.....	Toronto, Ont.	
1. G. R. Jones, B.A.Sc.....	Student, Victoria College. Toronto, Ont.	
3. T. Jones, B.A.Sc.....	Toronto, Ont.	
1.*A. E. Jupp, B.A.Sc.....	City Engineer's Dept. Toronto, Ont.	
3. J. D. Keppy.....	Fellow in Drawing, Toronto, Ont.	University of Toronto.
1. J. L. Lang, B.A.Sc.....	Toronto, Ont.	
3. A. P. Linton.....	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
4.*A. W. McConnell, B.A.Sc.....	Lecturer in Architecture, Toronto, Ont.	University of Toronto.
3.*D. G. McIlwraith.....	Draftsman, The Goldie & McCulloch Galt, Ont.	Co., Ltd.
2. J. A. McKenzie.....	Resident Engineer, Box 535, Winnipeg, Man.	C.P.R. Construction Dept.
1.*J. V. McNab.....	Transitman, C.P.R. Engineering Staff. Kenora, Ont.	
3. J. A. McPherson.....	Student, Faculty of Medicine, Queen's Kingston, Ont.	University.
2. K. A. McKenzie, B.A.Sc.....	Assistant Secretary and Librarian, Toronto, Ont.	Faculty of Applied Science.
1.*W. MacKinnon	Civil Engineer. Wilkinsburg, Pa.	

*Diploma with honours.

1906—Continued.

Course.	Name and address.	Occupation.
3.*W. Maclachlan, B.A.Sc.....	Toronto, Ont.	Construction Engineer, Can. West- inghouse Co.
3.*D. W. Marrs.....	Hamilton, Ont.	With The Hamilton Bridge Works Co., Ltd.
3. W. A. Maxwell.....	Windsor, Ont.	Draftsman, G. T. P. Ry.
1.*J. M. Menzies, B.A.Sc.....	Toronto, Ont.	Student in Theology, Knox College.
3. L. R. Miller.....	Toronto, Ont.	Post-Graduate Course in Engineering, University of Toronto.
1.*B. F. Mitchell, B.A.Sc.....	Hamilton, Ont.	
1. F. F. Montague.....	Toronto, Ont.	
1.*W. J. Moore, O.L.S.....	Pembroke, Ont.	Morris and Moore, Land Surveyors and Architects.
2. C. J. Murphy.....	Copper Cliff, Ont.	Chemist and Metallurgist.
1.*W. P. Near, B.A., B.A.Sc.....	North Bay, Ont.	Staff of T. & N. O. Ry.
3. D. G. Park, B.A.Sc.....	West Allis, Wis.	Engineering Apprentice, Allis-Chalmers Co.
3. G. W. Paterson.....	Tapscolt, Alta.	
5. R. E. Pettingill.....	Belleville, Ont.	Assistant Chemist, Belleville Portland Cement Co.
2.*R. C. Purser, B.A.Sc.....	Windsor, Ont.	With Detroit River Tunnel Co.
3. N. R. Robertson, B.A.Sc.....	Canada Life Bldg., Toronto, Ont.	
1. J. O. Roddick.....	Toronto, Ont.	Post-Graduate Course in Engineering, University of Toronto.
1. C. H. Rogers, B.A.Sc.....	Peterboro, Ont.	
2.*O. Rolfson, B.A.Sc.....	Walkerville, Ont.	
1. R. C. Ross, B.A.Sc.....	Port Robinson, Ont.	

*Diploma with honours.

1906—Continued.

Course.	Name and address.	Occupation.
1. K. G. Ross.....	Toronto, Ont.	
1.*H. T. Routly, O.L.S.....	Laird & Routly, Haileybury, Ont.	Engineers and Surveyors.
2. J. H. Ryckman.....	With Canada Foundry Co. Toronto, Ont.	
3.*W. K. Sanders.....	Engineer, New York Telephone Co. 15 Dey St., New York, N.Y.	
1.*W. A. Scott.....	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
1.*W. M. Stewart.....	Dominion Land Surveyor. 142 Aberdeen Ave., Hamilton, Ont.	
2. J. E. Thomson, B.A.Sc.....	Toronto, Ont.	
3.*C. L. Vickery.....	Erecting Engineer, Allis-Chalmers Co. 71 Broadway, New York, N.Y.	
5. W. E. Wickett (deceased).		
3.*J. N. Wilson.....	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
3.*E. M. Wood.....	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
1907.		
3.*F. G. Allen.....	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
1. F. J. Anderson.....	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
1. A. P. Augustine.....	Asst. to S. M. Johnson, B.C.L.S. and Greenwood, B.C.	C. Eng.
3.*H. D. Bowman.....	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
3. W. S. Brady.....	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
1. G. H. Broughton.....	Paris, Ont.	
1. J. A. Brown.....	On Staff of T. & N. O. Ry. Englehart, Ont.	

*Diploma with honours.

1907—Continued.

Course.	Name and address.	Occupation.
1. C. E. Bush.....	With Speight & Van Nostrand. Toronto, Ont.	
3. J. H. Caster.....	Student in Testing Dept., Peterboro, Ont.	Can. Gen. Elec. Co.
1.*E. Cavell	City Engineer's Office. Saskatoon, Sask.	
3.*C. B. B. Connell.....	With Mirrless & Watson. Glasgow, Scotland.	
1.*G. C. Cowper.....	Fellow in Drawing, Toronto, Ont.	University of Toronto.
2. J. V. Culbert.....	Assayer and Chemist at O'Brien Mine. Cobalt, Ont.	
3.*R. Davis	Schomberg, Ont.	
3 S. D. Evans	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
3.*F. R. Ewart.....	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
1. G. R. S. Fleming.....	With Atwell Fleming Printing Co. Toronto, Ont.	
6. P. C. Fux.....	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
1. J. S. Galletly.....	Wychwood Pk., Ont.	
2. G. Galt	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
1. A. B. Garrow.....	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
1. A. Gillies	With Detroit River Tunnel Co. Windsor, Ont.	
1. G. W. Graham.....	Eugenia, Ont.	
3. C. S. Grasett.....	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
1.*R. E. W. Hagarty.....	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
1. Hamilton, C. T.	Asst. to City Engineer. Windsor, Ont.	
3.*H. O. Hill.....	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.

*Diploma with honours.

1907—*Continued.*

Course.	Name and address.	Occupation.
1.*T. H. Hogg.....	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
3.*C. H. Hutton.....	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
1. H. M. Hyland.....	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
3. E. W. Hyman.....	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
3.*L. G. Ireland.....	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
1.*W. Jackson	Fellow in Surveying, Toronto, Ont.	University of Toronto.
4.*C. B. Jackson.....	Petrolea, Ont.	
3.*E. W. Kay.....	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
3. D. F. Keith.....	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
1. H. P. Keith.....	With Driscoll & Knight, Surveyors Edmonton, Alta.	and Engineers.
1. A. A. Kinghorn.....	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
1. L. W. Klingner.....	Parry Sound, Ont.	
1.*F. C. Lamb.....	Transitman on Dominion Land Sur- Walkerton, Ont.	vey, Sask.
3. A. D. LePan.....	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
1. J. H. Lindsay.....	Asst. to J. D. Sheply, Dist. Surveyor N. Battleford, Sask.	and Engineer.
3. J. A. D. McCurdy.....	Baddeck, C.B., N.S.	
1.*J. B. McFarlane.....	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
3.*D. J. McGugan.....	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
3. A. H. McIntosh.....	With Illinois Steel Co. Chicago, Ill.	
3. F. W. McNeill.....	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.

*Diploma with honours.

1907—Continued.

Course.	Name and address.	Occupation.
1.	M. K. McQuarrie.....	Office of the Resident Engineer, Vancouver, B.C.
		C. P. Ry. Co.
1.*	G. MacLeod	
	Parkhill, Ont.	
1.	A. G. Mackay.....	With The Hudson Co.
	New York, N.Y.	
1.	W. S. Malcolmson.....	Post-Graduate Course in Engineering, Toronto, Ont.
		University of Toronto.
3.	S. A. Marshall.....	With The Hamilton Bridge Works Hamilton, Ont.
		Co.
6.	D. H. C. Mason.....	Post-Graduate Course in Engineering, Toronto, Ont.
		University of Toronto.
3.	H. V. Maynard	Engineering Course, Peterboro, Ont.
		Canadian General Electric Co.
1.	J. W. Melson.....	Post-Graduate Course in Engineering, Toronto, Ont.
		University of Toronto.
1.	G. G. Mills.....	Post-Graduate Course in Engineering, Toronto, Ont.
		University of Toronto.
3.	J. B. Minns.....	Fellow in Drawing, Toronto, Ont.
		University of Toronto.
4.*	G. N. Molesworth.....	Draftsman, Eden Smith & Son, Toronto, Ont.
		Architects.
1.	J. M. Moore.....	Post-Graduate Course in Engineering, Toronto, Ont.
		University of Toronto.
5.*	P. F. Morley.....	Fellow in Chemistry, Toronto, Ont.
		University of Toronto.
1.	E. W. Murray.....	Asst. to A. H. Hawkins, D.L.S. Lacombe, Alta.
3.	J. D. Murray.....	With Fetherstonhaugh & Co., Toronto, Ont.
		Patent Solicitors and Engineers.
1.	E. W. Neelands.....	Post-Graduate Course in Engineering, Toronto, Ont.
		University of Toronto.
1.	R. E. K. Neelands.....	Post-Graduate Course in Engineering, Toronto, Ont.
		University of Toronto.
2.*	B. Neilly	Post-Graduate Course in Engineering, Toronto, Ont.
		University of Toronto.
1.	A. E. Nourse.....	Post-Graduate Course in Engineering, Toronto, Ont.
		University of Toronto.
2.	T. K. Paton.....	Miner. Victor, Colo.

*Diploma with honours.

1907—*Continued.*

Course.	Name and address.	Occupation.
1. F. W. Paulin.....	Arthur, Ont.	
1 R. B. Potter.....	Toronto, Ont.	Fellow in Physics, University of Toronto.
3.*F. E. Prochnow.....	Wilmington, Del.	
3.*J. F. Procunier.....	Toronto, Ont.	Fellow in Electricity, University of Toronto.
3. G. E. Quance.....	Toronto, Ont.	Post-Graduate Course in Engineering, University of Toronto.
3.*H. Raine	Hamilton, Ont.	With Hamilton Bridge Works Co.
1.*J. L. Rannie.....	Toronto, Ont.	Post-Graduate Course in Engineering, University of Toronto.
3. C. W. B. Richardson.....	Toronto, Ont.	Post-Graduate Course in Engineering, University of Toronto.
1. A. A. Ridler.....	Toronto, Ont.	City Engineer's Dept.
5. C. A. Scholfield.....	Buffalo, N.Y.	Chemist, Niagara Frontier Labora- tory.
1.*A. C. T. Sheppard.....	Ottawa, Ont.	Engineering Staff, Can. Pacific Ry.
1. F. R. Smith.....	Toronto, Ont.	City Engineer's Dept.
3. E. R. Smithrim.....	Toronto, Ont.	Post-Graduate Course in Engineering, University of Toronto.
1.*W. Snaith	Toronto, Ont.	With McGregor & McIntyre.
3.*A. C. Spencer.....	Toronto, Ont.	Post-Graduate Course in Engineering, University of Toronto.
3. G. S. Stewart	Strathroy, Ont.	
1. J. A. Stiles.....	Toronto, Ont.	Post-Graduate Course in Engineering, University of Toronto.
3.*J. L. Stiver.....	Toronto, Ont.	Asst. Inspector, Gas and Electric Meters.
1. G. F. Summers.....	Winchester, Ont.	
1.*H. W. Sutcliffe.....	Forest, Ont.	

*Diploma with honours.

1907—Continued.

Course.	Name and address.	Occupation.
1. P. M. Thompson.....	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
3. O. R. Thomson.....	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
1. L. R. Thomson.....	Demonstrator in Drawing, Toronto, Ont.	University of Toronto.
1. W. J. Walker.....	Resident Engineer, C. N. Ry. Quebec, Que.	
1. E. D. Wilkes.....	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
3. A. F. Wilson.....	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
3. M. H. Woods.....	With Can. Rand Drill Co. Sherbrooke, Que.	
3.*A. R. Zimmer.....	Engineering Apprentice, Hamilton, Ont.	Canadian Westinghouse Co.

CERTIFICATES.

MINERALOGY AND ASSAYING.

Date.	Name and Address.
1896. G. Johnston	
1896. A. T. Tye.....	c/o Empresa Hanséatica, Barran- quilla, Columbia, S. America.
1897. E. B. Webster.....	
1898. A. N. McMillan.....	Penetanguishene, Ont.
1900. A. H. Smith.....	Supt., Los Reyes Gold Mining and Milling Co., Oaxaca, Mexico.
1901. G. A. Hunt.....	

ELECTRICITY.

1896. E. I. Sifton.....	Manager, London Electric Construc- tion Co., London, Ont.
1903. W. Elwell	Top. Surveys Branch, Dept. of the Interior, Ottawa, Ont.

*Diploma with honours.

INDEX TO GRADUATES.

In the following alphabetical list of the Graduates is given the year of graduation of each student. In the preceding list, which is arranged by classes in the order of graduation, may be found additional information as to occupation, addresses, etc.

A.

Acres, H. G.....	1903	Angus, H. H.....	1903
Alexander, J. H.	1904	Apsey, J. F.....	1888
Alison, T. H.....	1892	Ardagh, A. G.	1893
Alison, J. G. R.....	1903	Ardagh, E. G. R.....	1900
Allan, J. R.....	1892	Arens, H. W.....	1905
Allan, J. L.....	1900	Armer, J. C.....	1906
Allen, F. G.....	1907	Armour, R. H.....	1905
Amos, W. L.....	1906	Armstrong, J.	1895
Anderson, A. G.....	1892	Ashbridge, W. T.....	1888
Anderson, F. J.....	1907	Augustine, A. P.....	1907
Andrews, E.	1897	Aylsworth, C. B.....	1905
Angus, R. W.	1894		

B.

Baldwin, F. W.....	1906	Begg, W. A.....	1905
Bain, J. A.....	1900	Bell, G. G.....	1905
Bain, J. W.....	1896	Bellisile, J. P. (deceased) ..	1906
Baker, M. H.....	1906	Bergey, A. E.....	1894
Ball, E. F.....	1888	Bertram, G. M.....	1901
Ballantyne, H. F.....	1893	Betts, H. H.....	1906
Banting, E. W.....	1906	Beynon, D. E.....	1906
Barber, H. G.....	1902	Bissett, G. W.....	1906
Barber, T.	1899	Blackwood, A. E.....	1895
Barber, W.	1905	Blackwood, W. C.....	1906
Barber, F.	1906	Blair, W. J.....	1902
Barker, H. P.....	1893	Bleakley, J. F.....	1885
Barley, J. H.....	1900	Boeckh, J. C.....	1906
Barrett, R. H.	1901	Bonnell, M. B.....	1904
Barrett, J. H.....	1904	Boswell, E. J.....	1895
Bates, M.	1906	Boswell, M. C.....	1900
Beatty, H. J.....	1890	Boustead, W. E. (deceased) ..	1890
Beatty, W. G.....	1901	Bow, J. A.....	1897
Beatty, J. A.....	1903	Bowers, W. J. (deceased) ..	1901
Beauregard, A. T.....	1894	Bowman, H. J.....	1885

Bowman, H. D.....	1907	Brown, D. B.....	1888
Bowman, F. M.....	1890	Brown, G. L.....	1893
Bowman, A. M.:.....	1886	Brown, L. L.....	1895
Boyd, D. G.....	1894	Brown, T. D.....	1904
Boyd, W. H.....	1898	Brown, J. A.....	1907
Brady, W. S.....	1907	Bucke, M. A. (deceased) ..	1890
Brandon, E. T. J.....	1901	Buck, W. A.....	1894
Brandon, H. E.....	1906	Bunnell, A. E. K.....	1906
Bray, L. T.....	1900	Burd, J. H.....	1903
Brebner, G. (deceased)....	1895	Burgess, E. L.....	1903
Brereton, W. P.....	1901	Burns, D.	1883
Breslove, J.	1903	Burns, J. C. (deceased)....	1887
Brian, M. E.....	1906	Burnham, F. W.....	1904
Bristol, W. M.....	1905	Burnside, J. T. M.....	1899
Brodie, W. M.....	1895	Burwash, L. T.....	1896
Broughton, J. T.....	1901	Burwash, N. A.....	1903
Broughton, G. H.....	1907	Bush, C. E.....	1907
Brown, J. M.....	1902	Byam, F. M.....	1906
Brown, T. W.....	1906		

C.

Calder, J. W.....	1904	Chalmers, W. J.....	1889
Cameron, N. C.....	1904	Chalmers, J.	1894
Cameron, A.	1906	Charlesworth, L. C.....	1893
Campbell, A. J.	1904	Charlton, H. W.	1897
Campbell, A. M.....	1904	Chase, A. V.....	1906
Campbell, W. G.....	1902	Chewett, H. J.....	1888
Campbell, A. R.....	1902	Chilver, C. A.....	1904
Campbell, R. J.....	1895	Chilver, H. L.....	1904
Campbell, G. M.....	1896	Christie, W.	1902
Campbell, W. C.....	1905	Christie, U. W.....	1904
Campbell, A. W.....	1906	Christie, A. G.....	1901
Canniff, C. M.....	1888	Chubbuck, L. B.....	1899
Carey, B.	1899	Clark, J.	1900
Carmichael, C. G.....	1902	Clark, G. T.....	1906
Carpenter, H. S.....	1897	Clark, F. F.....	1903
Carson, W. R.....	1905	Clement, W. A.....	1889
Carter, W. E. H.....	1898	Clement, S. R. A.....	1905
Carroll, M. J.....	1906	Clothier, G. A.....	1899
Caster, J. H.....	1907	Coates, P. C.....	1904
Cavell, E.	1907	Cockburn, J. R.....	1901
Chace, W. G.....	1901	Code, S. B.....	1904
Chadwick, R. E. C.	1906	Code, T. F. (deceased)....	1904
Challies, J. B.....	1904	Colhoun. G. A.....	1906

Conlon, F. T.....	1902	Cowan, W. A.....	1904
Connell, C. B. B.....	1907	Cowper, G. C.....	1907
Connor, H. V.....	1902	Craig, J. A.....	1899
Connor, A. W.....	1895	Craig, S. E.....	1904
Cook, W. A. Mc.....	1906	Creighton, A. G.....	1906
Cooper, C.	1899	Crerar, S. R.....	1904
Corrigan, G. D. (deceased) .	1890	Crosby, N. L. R.....	1905
Corrigan, T. E.....	1905	Culbert, M. T.....	1902
Coulson, C. L.....	1903	Culbert, J. V.....	1907
Cousins, E. L.....	1906	Cumming, R.	1902
Coulthard, R. W.....	1899	Currie, W. M.....	1904

D.

Daniels, W. N.....	1906	Dill, C. W.....	1891
Darling, E. H.....	1898	Dixon, H. A.....	1900
Davis, R.	1907	Dobie, J. S.....	1895
Davison, J. E.....	1900	Douglas, W. E.....	1902
Davison, A. E.....	1903	Duff, J. A. (deceased)	1890
Deacon, T. R.....	1891	Duff, W. A.	1901
Death, N. P. F.....	1906	Duggan, G. H.....	1883
DeCew, J. A.....	1896	Dundass, C. S.....	1906
Depew, H. H.	1904	Dunlop, R. J.....	1902
Dickson, G. W.....	1900	Dunn, T. H.....	1893
Dickinson, E. D.....	1900		

E.

Eason, D. E.....	1901	Empey, J. M.....	1902
Edwards, W. M.....	1902	English, A. B. (deceased) . .	1890
Elliott, H. P.....	1896	Evans, S. D.....	1907
Elliot, J. C.....	1899	Ewart, J. A.....	1894
Elder, A. J.....	1904	Ewart, F. R.....	1907
Elwell, W.	1902		

F.

Fairbairn, J. M. R.....	1893	Ford, A. L.....	1904
Fairchild, C.	1892	Forester, C.	1893
Fear, S. L.....	1906	Forman, W. E.....	1899
Fensom, C. J.....	1903	Forward, E. A.....	1897
Ferguson, G. H.....	1905	Forward, C. C.....	1906
Fierheller, H. S.....	1905	Francis, W. J.....	1893
Fingland, W.	1893	Fuce, E. O.....	1903
Fleck, J. G.....	1904	Fullerton, C. H.....	1900
Fleming, G. R. S.....	1907	Fux, P. C.....	1907
Forbes, D. L. H.....	1902		

G.

Gaby, F. A.....	1903	Goodwin, J. B.....	1892
Gagné, S.	1901	Gordon, J. P.....	1904
Galletly, J. S.	1907	Gourlay, W. A.....	1903
Galt, G.	1907	Graham, C. W.....	1906
Gardner, J. C.....	1903	Graham, G. W.....	1907
Garland, N. L.....	1890	Grant, W. F.....	1898
Garrow, A. B.....	1907	Grasett, C. S.....	1907
George, R. E.....	1903	Gray, A. T.....	1897
Gibbons, J.	1888	Gray, W. W.....	1904
Gibson, A. E.....	1902	Gray, A.	1904
Gibson, N. R.....	1901	Greene, P. W.....	1906
Gibson, W. S.....	1904	Greenwood, W. K.....	1904
Gillespie, P.	1903	Guernsey, F. W.....	1895
Gillies, A.	1907	Gurney, W. C.....	1896
Goldie, A. R.....	1893	Guest, W. S.....	1900
Goodwin, A. C.....	1902	Guy, E.	1899

H.

Hagarty, R. E. W.	1907	Hendry, M. C.....	1905
Haight, H. V.....	1896	Henry, J. A.....	1900
Hamer, A. T. E.....	1901	Henwood, C.	1902
Hamilton, J. F.....	1903	Herald, W. J.....	1894
Hamilton, C. B.....	1906	Hermon, E. B.....	1886
Hamilton, C. T.....	1907	Heron, J. B.....	1904
Hanly, S. C.....	1893	Hertzberg, C. S. L.....	1905
Hanes, G. S.....	1903	Hett, S.	1906
Hanning, G. F.....	1889	Hewson, W. G.....	1905
Hara, L. D.....	1904	Hicks, W. A. B.....	1897
Harcourt, F. Y.	1903	Hill, E. M. M.....	1904
Hare, W. A.....	1899	Hill, S. N.....	1904
Harkness, A. H.....	1895	Hill, H. O.....	1907
Harkness, A. L.....	1906	Hogg, T. H.....	1907
Harris, C. J.....	1904	Holcroft, H. S.....	1900
Harrison, R. L.....	1906	Hookway, C. W.....	1906
Harrison, F. W.....	1905	Hopkins, R. H.....	1906
Harrison, E.	1906	Horton, J. A.....	1903
Hartney, J. C.....	1906	Houston, R. S.....	1906
Harvey, C.	1901	Huber, W.	1906
Haultain, H. E. T.....	1889	Hull, H. S.....	1895
Hayes, L. J.....	1903	Hull, A. H.....	1906
Hemphill, W.	1900	Hutcheon, J.	1890
Henderson, E. E.....	1885	Hutton, C. H.....	1907
Henderson, F. D.....	1903	Hyland, H. M.....	1907
Henderson, S. E. M.....	1900	Hyman, E. W.....	1907

I.

Ingles, C. J.....	1904	Ireland, L. G.....	1907
Innis, W. L.....	1890	Irvine, J.	1889

J.

Jackson, J. G.....	1903	Johnston, H.	1903
Jackson, F. C.....	1901	Johnston, A. C.....	1894
Jackson, W.	1907	Johnston, S. M.....	1894
Jackson, C. B.....	1907	Johnston, H. A.....	1900
James, O. S.....	1891	Johnston, J. C.....	1900
James, D. D.....	1889	Johnston, J. A.....	1900
James, E. A.....	1904	Johnston, C. K.....	1903
Jepson, W. C.....	1906	Johnston, C.	1906
Jeffrey, D.	1882	Jones, J. E.....	1894
Jermyn, P. V.....	1904	Jones, G. S.....	1905
Job, H. E.....	1894	Jones, G. R.....	1906
Johnston, D. M.....	1902	Jupp, A. E.....	1906

K.

Kay, E. W.....	1907	King, C. F.....	1897
Keeffe, W. S. H.....	1904	Kinghorn, A. A.....	1907
Keele, J.	1893	Kirkland, W. C.....	1884
Keith, D. F.....	1907	Klingner, L. W.	1907
Keith, H. P.....	1907	Kormann, J. S.....	1898
Kennedy, J. H.....	1882	Knight, R. H.....	1902
Keppy, J. D.....	1906	Kribs, G.	1905

L.

Laidlaw, J. T.....	1893	Latham, R.	1899
Laidlaw, A.	1901	Latornell, A. J.....	1903
Laing, W. F. (deceased)...	1896	Latornell, A.	1905
Laing, A. T.....	1892	Lavrock, J. E.....	1898
Laird, R.	1886	Lawson, W.	1892
Lamb, F. C.....	1907	Lawrie, R. R. (deceased)...	1896
Lane, A. (deceased)	1891	Lea, W. A. (deceased)	1892
Lang, A. G.....	1903	Leighton, J. W.....	1905
Lang, J. L.....	1906	LePan, A. D.....	1907
Langmuir, F. L.....	1902	Lindsay, J. H.....	1907
Langley, C. E.....	1892	Linton, A. P.....	1906
Larkworthy, W. J.....	1904	Lott, A. E.....	1887
Laschinger, E. J.....	1892	Loudon, T. R.....	1905
Lash, F. L.....	1893	Ludgate, B. A.....	1885
Lash, N. M.....	1894	Lumbers, W. C.....	1901

Mac.

MacBeth, C.	1896	MacKenzie, K. A.	1906
MacKay, J. T.	1902	Mackintosh, D.	1898
MacMillan, C.	1901	Mackinnon, W.	1906
Macallum, A. F.	1893	MacIachlan, W.	1906
Macdougall, A. C.	1901	MacLeod, G.	1907
Mackay, A. G.	1907		

Mc.

McAllister, J. E.	1891	McIlwraith, D. G.	1906
McAllister, A. L.	1893	McIntosh, A. H.	1907
McAree, J. (deceased)	1882	McKay, O.	1885
McArthur, R. E.	1900	McKay, W. N.	1895
McAuslan, H. J.	1903	McKay, C. (deceased)	1904
McBride, A. H.	1902	McKenzie, D. W.	1905
McConnell, A. W.	1906	McKenzie, J. A.	1906
McCuaig, O. B.	1904	McKinnon, H. L.	1895
McCulloch, A. L.	1887	McLean, C. A.	1905
McCurdy, J. A. D.	1907	McLennan, A. L.	1902
McDougall, J.	1884	McMaster, A. T. C.	1901
McDowall, R.	1888	McMillan, J. G.	1900
McEntee, B.	1892	McMillan, D.	1904
McEwen, G. G.	1904	McMurchy, J. A.	1896
McFarlen, G. W.	1888	McNab, J. V.	1906
McFarlen, T. J.	1893	McNaughton, A. L.	1903
McFarlane, J. A.	1903	McNaughton, F. W.	1898
McFarlane, W. G.	1904	McNeill, F. W.	1907
McFarlane, J. B.	1907	McPherson, A. J.	1893
McGibbon, C. P.	1904	McPherson, J. A.	1906
McGorman, S. E.	1906	McQuarrie, M. K.	1907
McGowan, J.	1895	McTaggart, A. L.	1894
McGregor, W. W. (deceased)	1905	McVean, H. G.	1901
McGugan, D. J.	1907		

M.

Madden, J. F. S.	1902	Marshall, S. A.	1907
Main, W. T.	1893	Martin, F.	1887
Malcolmson, W. S.	1907	Martin, T.	1896
Manson, G. J.	1904	Mason, D. H. C.	1907
Marani, C. J.	1888	Matheson, W. C.	1901
Marani, V. G.	1893	Mathison, P.	1902
Marriott, F. G.	1903	Maus, C. A.	1903
Marrs, C. H.	1902	Maxwell, W. A.	1906
Marrs, D. W.	1906	Maynard, H. V.	1907

Meadows, W. W.....	1895	Molesworth, G. N.....	1907
Melson, J. W.....	1907	Monds, W.	1899
Menzies, J. M.....	1906	Montague, F. F.....	1906
Mennie, R. S.....	1902	Montgomery, R. H.....	1903
Merrill, E. B.....	1890	Moore, H. H.....	1902
Middleton, H. T.....	1901	Moore, E. E.....	1904
Mickle, G. R.....	1888	Moore, J. H.....	1888
Mills, G. G.....	1907	Moore, J. E. A.....	1891
Minns, J. B.....	1907	Moore, F. A.....	1903
Minty, W.	1894	Moore, W. J.....	1906
Mill, F. X. (deceased).....	1889	Moore, J. M.....	1907
Miller, L. Haun.	1900	Moorhouse, W. N.....	1904
Miller, M. L.....	1903	Morden, L. W.....	1905
Miller, L. R.....	1906	Morley, P. F.....	1907
Milne, C. G.....	1892	Morris, J. L.....	1881
Mines, W.	1893	Mullins, E. E.....	1903
Mitchell, P. H.....	1903	Munro, W. H.....	1904
Mitchell, C. H.....	1892	Munro, G. R.....	1905
Mitchell, B. F.....	1906	Murphy, C. J.....	1906
Moberley, H. K.....	1889	Murray, E. W.	1907
Moffatt, R. W.....	1905	Murray, J. D.....	1907

N.

Nash, T. S.....	1902	Newman, W.	1891
Near, W. P.....	1906	Nevitt, I. H.....	1903
Neelands, E. V.	1900	Nicholson, C. J.....	1894
Neelands, E. W.	1907	Nicklin, W. G.....	1905
Neelands, R. E. K.....	1907	Nourse, A. E.....	1907
Neilly, B.	1907		

O.

Oliver, E. W.....	1903	Oliver, J. P.....	1903
-------------------	------	-------------------	------

P.

Pace, J. D.....	1903	Patten, B. B.....	1903
Pace, G.	1904	Patten, B. B.....	1905
Pardoe, W. S.....	1904	Patterson, J.	1899
Paris, J.	1904	Paulin, F. W.....	1907
Park, D. G.....	1906	Peaker, W. J.....	1904
Parke, J.	1904	Pedder, J. R. (deceased)...	1890
Parsons, J. L. R.....	1901	Pettingill, R. E.....	1906
Paterson, G. W.....	1906	Philp, D. H.....	1903
Paton, T. K.....	1907	Philips, E. H.....	1900

Pickering, A. E.....	1904	Powell, G. G.....	1902
Pinhey, C. H.....	1887	Power, G. H.....	1901
Pinkney, D. H.....	1903	Prentice, J. M. (deceased) ..	1892
Playfair, N. L.....	1892	Price, H. W.....	1901
Phillips, E. P. A.....	1905	Prochnow, F. E.....	1907
Plunkett, T. H.....	1903	Procutnier, J. F.....	1907
Pope, A. S. H.....	1899	Proudfoot, H. W. (deceased)	1897
Porte, W. B.....	1906	Pullen, E. F.....	1905
Potter, R. B.....	1907	Purser, R. C.....	1906

Q.

Quance, G. E.....	1907
-------------------	------

R.

Raine, H.	1907	Rogers, J.	1887
Ramsey, G. L.	1905	Rogers, C. H.....	1906
Rannie, J. L.....	1907	Rolph, H.	1894
Ratz, W. F.....	1902	Rolfson, O.	1906
Raymer, A. R.....	1884	Rose, K.	1888
Raymond, D. C.....	1904	Rosebrugh, T. R.	1889
Reid, F. B.....	1904	Ross, J. E.....	1888
Revell, G. E.....	1899	Ross, R. A.....	1890
Richards, E.	1899	Ross, J. A.....	1892
Richardson, G. H.....	1888	Ross, K. G.....	1906
Richardson, C. W. B.....	1907	Ross, R. B.....	1905
Riddell, M. R.....	1904	Ross, R. C.....	1906
Ridler, A. A.....	1907	Rothwell, T. E.....	1905
Roaf, J. R.....	1900	Roxburgh, G. S.....	1904
Robertson, H. D.....	1902	Rounthwaite, C. H. E.....	1900
Robertson, J.	1884	Routly, H. T.....	1906
Robertson, J. M.....	1893	Russell, W. B.....	1891
Robertson, N. R.....	1906	Russel, R.	1893
Robinson, J. (deceased)	1891	Rust, H. P.....	1901
Robinson, F. J.....	1895	Rutherford, F. N.....	1904
Robinson, A. H. A.....	1897	Ryckman, J. H.....	1906

S.

Sanders, W. K.....	1906	Scott, W. F.....	1897
Sauer, M. V.....	1901	Scott, G. S.....	1905
Saunders, G. A.....	1899	Scott, W. A.....	1906
Saunders, H. W.....	1900	Serson, H. V.....	1905
Scheibe, R. R.....	1896	Seymour, H. L.....	1903
Scheibe, H. M.....	1903	Shanks, T.	1899
Schofield, C. A.....	1907	Shaw, J. H.....	1898

Sheply, J. D.....	1904	Spencer, A. C.....	1907
Sheppard, A. C. T.....	1907	Spotton, A. K.....	1894
Shields, J. D.....	1894	Squire, R. H.....	1893
Shipley, A. E.....	1898	Steel, I. J.....	1902
Shirriff, C. H.....	1905	Stern, E. W.....	1884
Silvester, G. E.....	1891	Stevenson, W. H.....	1901
Sinclair, D.	1902	Stewart, J. A.....	1898
Sisson, C. E.....	1905	Stewart, D. L. N.....	1905
Slater, F. W.....	1904	Stewart, M. A.....	1905
Smallpiece, F. C.....	1898	Stewart, W. M.....	1906
Smart, R. S.....	1904	Stewart, G. S.....	1907
Smiley, R. W.....	1897	Stiles, J. A.....	1907
Smith, A. N.....	1892	Stiver, J. L.....	1907
Smith, A.	1894	Stocking, F. T.....	1895
Smith, H. G. (deceased)	1903	Stubbs, W. F.....	1905
Smith, R. W.....	1898	Stull, W. W.....	1897
Smith, J. H.....	1903	Sturdy, N. H.....	1905
Smith, D. A.....	1904	Summers, G. F.....	1907
Smith, F. R.....	1907	Sutcliffe, H. W.....	1907
Smither, W. J.....	1904	Sutherland, W. H.....	1902
Smithrim, E. R.....	1907	Swan, W. G.....	1905
Snaith, W.	1907	Sykes, F. H.....	1905
Speller, F. N.....	1893	Symmes, H. D.....	1891

T.

Taylor, T.	1902	Thorne, S. M.....	1900
Taylor, W. V.....	1893	Thorold, F. W.....	1900
Taylor, A.	1900	Tillson, E. D.....	1905
Teasdale, C. M.....	1902	Townsend, C. J.....	1904
Tennant, D. C.....	1899	Townsend, D. T.....	1904
Tennant, W. C.....	1900	Traill, J. J.....	1905
Thompson, P. M.....	1907	Treadgold, W. M.....	1905
Thomson, T. K.....	1886	Trees, S. L.....	1903
Thomson, R. W.....	1892	Tremaine, R. C. C. (dec'd.) .	1895
Thomson, S. E.....	1904	Trimble, A. V.....	1904
Thomson, L. R.....	1905	Tucker, B. B.....	1904
Thomson, J. E.....	1906	Turner, W. E.....	1905
Thomson, O. R.....	1907	Tyrrell, J. W.....	1883
Thomson, L. R.....	1907	Tyrrell, H. G.....	1886

U.

Umbach, J. E.....	1906	Uren, A. E.	1905
-------------------	------	------------------	------

V.

VanEvery, W. W.....	1899	Vercoe, H. L.....	1898
Vaughan, J. M.....	1905	Vickery, C. L.....	1906

W.

Wade, E.	1904	Wickett, T.	1889
Wagner, W. E.....	1899	Wiggins, T. H.....	1890
Wagner, H. L.....	1905	Wilkes, E. D.....	1907
Waldron, J.	1903	Wilkinson, T. A.....	1898
Walker, E. W.....	1904	Williamson, D. A.....	1898
Walker, W. J.....	1907	Williams, C. G.....	1903
Wanless, A. A.....	1902	Willson, R. D.....	1901
Wass, S. B.....	1903	Wilson, N. D.....	1903
Watson, R. B.....	1893	Wilson, J. N.....	1906
Watson, J. P.....	1904	Wilson, A. F.....	1907
Watt, G. H.....	1899	Withrow, W. J.....	1890
Weekes, M. B.....	1897	Withrow, F. D.....	1900
Weir, H. M.....	1900	Wood, E. M.....	1906
Weir, J. M.....	1904	Woods, M. H.....	1907
Weldon, E. A.....	1897	Worthington, W. R.....	1904
Wells, A. F.....	1904	Wright, C. H. C.....	1888
Whelihan, J. A.....	1903	Wright, R. T.....	1894
White, A. V.....	1892	Wright, W. F.....	1904
White, H. F.....	1903		

Y.

Yeates, E.	1899	Young, W. H.....	1906
Young, C. R.....	1903		

Z.

Zahn, H. J.....	1902	Zimmer, A. R.....	1907
-----------------	------	-------------------	------

THE
CALENDAR

OF THE;

University of Toronto



**FACULTY OF
APPLIED SCIENCE AND ENGINEERING**

1909-1910

**TORONTO
THE UNIVERSITY PRESS**

CONTENTS.

	PAGE
CALENDARS	6
FACULTY LIST	8
HISTORICAL SKETCH	11
GRADUATING DEPARTMENTS	12
PROFESSIONAL DEGREES	12
FELLOWSHIPS	12
ADMISSION.	
GENERAL REGULATIONS	13
EQUIVALENT EXAMINATIONS	14
ADMISSION AD EUNDEM STATUM	15
TUITION FEES, DEPOSITS, ETC.	15
LODGING AND BOARD—RESIDENCES	16
REGULATIONS RESPECTING STUDENTS	16
REGULATIONS RESPECTING EXAMINATIONS.	
REGULAR EXAMINATIONS	17
SUPPLEMENTAL EXAMINATIONS	17
VACATION WORK	18
HONORS	18
REGULATIONS RESPECTING LABORATORY WORK.	
FIELD WORK	18
DRAFTING ROOMS	19
THESIS	19
SHOPWORK	19
EXEMPTIONS	19
REGULAR EXAMINATIONS.	
I. YEAR	20
II. YEAR	21
III. YEAR	22
IV. YEAR	23
DEPARTMENT OF CIVIL ENGINEERING.	
PROSPECTUS	24
TABULAR OUTLINE	24
DEPARTMENT OF MINING ENGINEERING	
PROSPECTUS	27
TABULAR OUTLINE	27
DEPARTMENT OF MECHANICAL ENGINEERING.	
PROSPECTUS	29
TABULAR OUTLINE	29

DEPARTMENT OF ARCHITECTURE.	
PROSPECTUS	32
TABULAR OUTLINE	32
DEPARTMENT OF ANALYTICAL AND APPLIED CHEMISTRY.	
PROSPECTUS	34
TABULAR OUTLINE	34
DEPARTMENT OF CHEMICAL ENGINEERING.	
PROSPECTUS	36
TABULAR OUTLINE	36
DEPARTMENT OF ELECTRICAL ENGINEERING.	
PROSPECTUS	38
TABULAR OUTLINE	38
OUTLINE OF LECTURE COURSES.	
YEARS I, II, III, IV.....	41
OUTLINE OF LABORATORY COURSES.	
YEARS I, II, III, IV.	60
OUTLINE OF VACATION WORK.	
YEARS II, III.	71
ACT RESPECTING DOMINION, ONTARIO, MANITOBA AND BRITISH	
COLUMBIA LAND SURVEYORS	72
ONTARIO ARCHITECTS ACT	75
LABORATORY EQUIPMENTS.	
THERMODYNAMICS LABORATORY	76
HYDRAULIC LABORATORY	77
PHYSICAL LABORATORY	79
STRENGTH OF MATERIALS LABORATORY	79
CEMENT TESTING LABORATORY	80
METROLOGICAL LABORATORY	80
ELECTRICAL LABORATORY	81
CHEMICAL LABORATORY	82
GEOLOGICAL AND MINERALOGICAL LABORATORY	82
ASSAYING LABORATORY	83
MILLING AND CONCENTRATING LABORATORY	84
MUSEUM	85
LIBRARY	86
ENGINEERING SOCIETY	87
ELECTRICAL CLUB	87
ATHLETIC CLUBS	88
2ND FIELD CO. OF ENGINEERS	90
GYMNASIUM	90
FACULTY OF APPLIED SCIENCE Y.M.C.A.	91
STUDENTS IN ATTENDANCE	92

	PAGE
PRIZEMEN	100
GRADUATES IN APPLIED SCIENCE	102
" CIVIL ENGINEERING	106
" MINING ENGINEERING	106
" MECHANICAL ENGINEERING	106
" ELECTRICAL ENGINEERING	106
GRADUATES OF SCHOOL OF PRACTICAL SCIENCE	107
CERTIFICATES	152
INDEX TO GRADUATES	153

CALENDAR, 1909.

JANUARY.							FEBRUARY.							MARCH.						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
..	..	..	..	..	1	2	..	1	2	3	4	5	6	..	1	2	3	4	5	6
3	4	5	6	7	8	9	7	8	9	10	11	12	13	7	8	9	10	11	12	13
10	11	12	13	14	15	16	14	15	16	17	18	19	20	14	15	16	17	18	19	20
17	18	19	20	21	22	23	21	22	23	24	25	26	27	21	22	23	24	25	26	27
24	25	26	27	28	29	30	28	..	..	..	..	..	..	28	29	30	31	..	..	..
31	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
APRIL.							MAY.							JUNE.						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
..	..	..	..	1	2	3	..	..	..	..	..	1	2	..	..	1	2	3	4	5
4	5	6	7	8	9	10	2	3	4	5	6	7	8	6	7	8	9	10	11	12
11	12	13	14	15	16	17	9	10	11	12	13	14	15	13	14	15	16	17	18	19
18	19	20	21	22	23	24	16	17	18	19	20	21	22	20	21	22	23	24	25	26
25	26	27	28	29	30	..	23	24	25	26	27	28	29	27	28	29	30	..	..	..
..	..	..	..	..	..	..	30	31	..	..	..	..	..	..	..	..	..	..	..	..
JULY.							AUGUST.							SEPTEMBER.						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
..	..	..	..	1	2	3	1	2	3	4	5	6	7	..	..	..	1	2	3	4
4	5	6	7	8	9	10	8	9	10	11	12	13	14	5	6	7	8	9	10	11
11	12	13	14	15	16	17	15	16	17	18	19	20	21	12	13	14	15	16	17	18
18	19	20	21	22	23	24	22	23	24	25	26	27	28	19	20	21	22	23	24	25
25	26	27	28	29	30	31	29	30	31	..	..	..	..	26	27	28	29	30	..	..
..
OCTOBER.							NOVEMBER.							DECEMBER.						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
..	..	..	..	1	2	3	..	1	2	3	4	5	6	..	..	1	2	3	4	5
3	4	5	6	7	8	9	7	8	9	10	11	12	13	5	6	7	8	9	10	11
10	11	12	13	14	15	16	14	15	16	17	18	19	20	12	13	14	15	16	17	18
17	18	19	20	21	22	23	21	22	23	24	25	26	27	19	20	21	22	23	24	25
24	25	26	27	28	29	30	28	29	30	..	..	..	..	26	27	28	29	30	31	..
31	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

CALENDAR, 1910.

JANUARY.							FEBRUARY.							MARCH.						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
..	..	..	..	..	..	1	..	..	1	2	3	4	5	..	..	1	2	3	4	5
2	3	4	5	6	7	8	6	7	8	9	10	11	12	6	7	8	9	10	11	12
9	10	11	12	13	14	15	13	14	15	16	17	18	19	13	14	15	16	17	18	19
16	17	18	19	20	21	22	20	21	22	23	24	25	26	20	21	22	23	24	25	26
23	24	25	26	27	28	29	27	28	..	..	..	..	..	27	28	29	30	31	..	..
30	31	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

APRIL.							MAY.							JUNE.						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
..	..	..	..	..	1	2	1	2	3	4	5	6	7	..	..	..	1	2	3	4
3	4	5	6	7	8	9	8	9	10	11	12	13	14	5	6	7	8	9	10	11
10	11	12	13	14	15	16	15	16	17	18	19	20	21	12	13	14	15	16	17	18
17	18	19	20	21	22	23	22	23	24	25	26	27	28	19	20	21	22	23	24	25
24	25	26	27	28	29	30	29	30	31	..	..	..	..	26	27	28	29	30	..	..
..

CALENDAR 1909-1910.

- 1909—Sept. 1 Applications for Registration received.
20 Meeting of Faculty Council.
Supplemental Examinations begin.
28 First Term begins.
Lectures and Practical Work begin.
Last day for presentation of Vacation Work.
29 President's address to students of all Faculties.
- Oct. 1 Meeting of Faculty Council.
6 Meeting of Engineering Society.
20 Meeting of Engineering Society.
- Nov. 3 Meeting of Engineering Society.
5 Meeting of Faculty Council.
17 Meeting of Engineering Society.
- Dec. 1 Meeting of Engineering Society.
3 Meeting of Faculty Council.
17 First Term ends at 1 p.m.
- 1910—Jan. 4 Second Term begins.
Last day for presentation of Thesis for B.A.Sc.
7 Meeting of Faculty Council.
12 Meeting of Engineering Society.
26 Meeting of Engineering Society.
- Feb. 4 Meeting of Faculty Council.
8 Faculty dinner.
9 Ash Wednesday—Building closed.
10 Meeting of Engineering Society.
23 Meeting of Engineering Society.
- Mar. 4 Meeting of Faculty Council.
9 Meeting of Engineering Society.
11 Annual elections of Engineering Society.
25 Good Friday—Building closed.
30 Annual meeting of Engineering Society.
- April 1 Meeting of Council.
11 Lectures and Practical Work close.
15 Annual Examinations begin.
- May 6 Meeting of Council.
- June 10 Annual Commencement.

The buildings will be closed on all public holidays and daily at noon during July and August.

The University of Toronto.

FACULTY OF APPLIED SCIENCE AND ENGINEERING.

President..... R. A. FALCONER, LL.D., D.LITT.
Dean of Faculty..... J. GALBRAITH, M.A., LL.D.
Secretary of Faculty..... A. T. LAING, B.A.Sc.
Bursar..... F. A. MOURÉ, Esq.

F. B. ALLAN, M.A., PH.D., *Associate Professor of Organic Chemistry*.
 380 Brunswick Ave.
 G. R. ANDERSON, M.A., *Lecturer in Physics*.....505 Euclid Ave.
 R. W. ANGUS, B.A.Sc., *Professor of Mechanical Engineering*.
 42 Howland Ave.
 E. G. R. ARDAGH, B.A.Sc., *Lecturer in Chemistry*....25 Grange Road.
 J. W. BAIN, B.A.Sc., *Associate Professor of Applied Chemistry*.
 393 Brunswick Ave.
 ALFRED BAKER, M.A., *Professor of Mathematics*.....81 Madison Ave.
 B. A. BENSLEY, B.A., PH.D., *Associate Professor of Zoology*.
 316 Brunswick Ave.
 M. C. BOSWELL, M.A., PH.D., *Lecturer in Chemistry*....100 Dewson St.
 C. A. CHANT, M.A., PH.D., *Associate Professor of Astro-Physics*.
 201 Madison Ave.
 J. R. COCKBURN, B.A.Sc., *Lecturer in Descriptive Geometry*.
 169 Avenue Road.
 A. P. COLEMAN, M.A., PH.D., *Professor of Geology*.....476 Huron St.
 S. R. CHERAB, B.A.Sc., *Demonstrator in Surveying*.....10 Carling Ave.
 A. T. DELURY, M.A., *Professor of Mathematics*..University of Toronto.
 W. HODGSON ELLIS, M.A., M.B., *Professor of Applied Chemistry*.
 74 St. Alban St.
 J. H. FAULL, B.A., PH.D., *Associate Professor of Botany*.
 102 Yorkville Ave.
 H. S. FIERHELLER, B.A.Sc., *Demonstrator in Electrical Engineering*.
 535 Sherbourne St.
 J. GALBRAITH, M.A., LL.D., *Professor of Engineering*.
 Chemistry and Mining Bldg.
 P. GILLESPIE, B.A.Sc., A.M. CAN. SOC. C.E., *Lecturer in Applied Mechanics*. 63 Alexander St.
 W. W. GRAY, B.A.Sc., *Demonstrator in Thermodynamics*.
 Oak Ave., East Toronto.
 H. E. T. HAULTAIN, C.E., M.I.M.M., *Associate Professor of Mining*.
 Alexandra Apartments.
 W. J. LOUDON, B.A., *Professor of Mechanics*.....133 Walmer Road.

- J. MCGOWAN, B.A., B.A.SC., *Associate Professor of Applied Mechanics.*
27 McMaster Ave.
- M. A. MACKENZIE, M.A., *Associate Professor of Mathematics.*
1 Bellwoods Park.
- W. L. MILLER, B.A., PH.D., *Professor of Physical Chemistry.*
50 St. Alban St.
- W. A. PARKS, B.A., PH.D., *Associate Professor of Geology.*
69 Albany Ave.
- A. L. PARSONS, B.A., *Lecturer in Mineralogy.*.....11 Howland Ave.
- H. W. PRICE, B.A.SC., *Lecturer in Electrical Engineering.*
5 Howland Ave.
- M. R. RIDDELL, B.A.SC., *Lecturer in Mechanical Engineering.*
86 Spadina Road.
- T. R. ROSEBRUGH, M.A., *Professor of Electrical Engineering.*
92 Walmer Road.
- L. B. STEWART, O.L.S., D.T.S., *Professor of Surveying and Geodesy.*
161 Admiral Rd.
- R. B. THOMSON, B.A., *Lecturer in Botany.*
- J. J. TRAILL, B.A.SC., *Demonstrator in Hydraulics.*.....30 First Ave.
- W. M. TREADGOLD, B.A., *Lecturer in Surveying.*.....85 Gloucester St.
- E. WADE, B.A., *Demonstrator in Mining.*.....617 Markham St.
- T. L. WALKER, M.A., PH.D., *Professor of Mineralogy and Petrography.*
62 Maple Ave.
- C. H. C. WRIGHT, B.A.SC., MEM. O.A.A., *Professor of Architecture.*
419 Markham St.

Sessional Appointments.

- E. W. BANTING, B.A.SC., *Demonstrator in Surveying.*..330 St. George St.
- S. BEATTY, B.A., *Fellow in Mathematics.*.....577 Church St.
- W. C. BLACKWOOD, *Fellow in Physics.*.....10 Henry St.
- R. E. C. CHADWICK, *Fellow in Drawing.*.....99 Howland Ave.
- C. S. DUNDASS, B.A.SC., *Demonstrator in Electrical Engineering.*
10 Henry St.
- S. DUSHMAN, B.A., *Lecturer in Electrochemistry.*.....36 Beatrice St.
- F. R. EWART, B.A.SC., *Demonstrator in Electrical Engineering.*
157 Gore Vale Ave.
- A. B. GARROW, B.A.SC., *Fellow in Drawing.*.....49 St. George St.
- W. F. GREEN, B.A., *Demonstrator in Mineralogy.*.....219 Robert St.
- W. S. GUEST, B.A.SC., *Demonstrator in Electrical Engineering.*
30 Grosvenor St.
- T. H. HOGG, B.A.SC., *Demonstrator in Applied Mechanics.*
University Residence.
- R. H. HOPKINS, B.A.SC., *Demonstrator in Electrical Engineering.*
149 Beverley St.

A. G. HUNTSMAN, B.A., M.B., *Instructor in Zoology.*

655 Spadina Ave.

E. W. HYMAN, B.A.Sc., *Fellow in Drawing*.....91 Wellesley St.

A. E. JOHNS, B.A., *Fellow in Mathematics*.....510 Spadina Ave.

A. A. KINGHORN, B.A.Sc., *Fellow in Physics*.....89 Geoffrey St.

H. M. LANCASTER, B.A.Sc., *Demonstrator in Chemistry.*

134 Huron St.

A. D. LEPAN, B.A.Sc., *Demonstrator in Drawing*.....83 Grenville St.

T. R. LOUDON, B.A.Sc., *Lecturer in Drawing*.....133 Walmer Road.

A. W. McCONNELL, B.A.Sc., *Lecturer in Architecture*..64 St. George St.

G. G. MILLS, B.A.Sc., *Fellow in Drawing*.....89 Glen Road.

H. P. MILLS, B.A., *Fellow in Electrochemistry*.....19 Winchester St.

A. B. MITCHELL, *Fellow in Drawing*.....59 Concord Ave.

R. W. MOFFATT, B.A.Sc., *Demonstrator in Drawing*..345½ Markham St.

REV. P. W. MUELLER, B.A., *Instructor in German*.....96 Warren Road.

W. S. PARDOE, B.A.Sc., *Fellow in Hydraulics*.....15 Elgin Ave.

J. F. PROCUNIER, *Fellow in Electrical Engineering*28 Robert St.

R. C. PURSER, B.A.Sc., *Fellow in Surveying and Mineralogy.*

44 Gloucester St.

L. V. REDMAN, B.A., *Fellow in Electrochemistry*.....Trinity College.

L. J. ROGERS, *Fellow in Chemistry*.....55 Madison Ave.

O. ROLFSON, B.A.Sc., *Fellow in Surveying*.....63 Clinton St.

H. E. ROTHWELL, *Fellow in Chemistry*.....241 Dunn Ave.

A. C. SPENCER, B.A.Sc., *Fellow in Drawing*.....142 Bloor St. W.

J. A. STILES, B.A.Sc., *Demonstrator in Drawing*.....286 Jarvis St.

W. G. SWAN, B.A.Sc., *Demonstrator in Strength of Materials.*

143 Bloor St. W.

T. TAYLOR, *Fellow in Drawing*.....212 St. Clarens Ave.

L. R. THOMSON, B.A.Sc., *Demonstrator in Drawing*....244 Bloor St. W.

J. A. WALKER, *Fellow in Surveying*.....699 Spadina Ave.

E. M. WOOD, B.A.Sc., *Demonstrator in Electrical Engineering.*

10 Henry St.

M. H. WOODS, *Fellow in Drawing*.....654 Spadina Ave.

G. WRIGHT, *Fellow in Drawing*.....60 Coolmine Road.

C. R. YOUNG, B.A.Sc., A.M. CAN. SOC. C.E., *Lecturer in Applied*

Mechanics.113 Winchester St.

FACULTY OF APPLIED SCIENCE AND ENGINEERING.

HISTORICAL SKETCH.

The Legislative Assembly during the Session of 1877 gave its sanction to the establishment of a School of Practical Science on the basis proposed in the memorandum of the Minister of Education confirmed by the Lieutenant-Governor in Council on the 3rd day of February, 1877.

By the scheme thus approved of, the Government effected an arrangement with the Council of University College whereby the students of the School of Practical Science enjoyed full advantage of the instruction given by its professors and lecturers in all the departments of science which were embraced in the work of the School.

This arrangement was brought to an end in 1889 by the transfer of the department of science above referred to, from University College to the University of Toronto under the operation of the University Federation Act.

In order that the students of the School might continue to enjoy the advantage of the instruction of the above departments, the Senate of the University of Toronto passed a Statute in October, 1889, affiliating the School to the University, which Statute was confirmed by the Lieutenant-Governor on the 30th day of October, 1889.

By an Order-in-Council, approved by the Lieutenant-Governor, on the 6th day of November, 1889, a Principal was appointed, and the management of the School was entrusted to a council composed of the Principal as chairman, and the Professors, Lecturers and Demonstrators appointed on the Teaching Faculty of the School.

By the terms of this order the management and discipline of the School was vested in the Council.

By a Statute of the Senate of the University of Toronto, passed on December 14th, 1900, the teaching staff and examiners of the School of Practical Science, together with the examiners for the degree of B.A.Sc., and professional degrees in Engineering, were constituted ex-officio the Faculty of Applied Science and Engineering of the University of Toronto.

By an Order-in-Council dated the 30th day of January, 1903, the Council of the School was made to consist of the Principal, the Professors and Lecturers, together with the Registrar.

By the University Act, 1906, the School of Practical Science was united to the University of Toronto as its Faculty of Applied Science and Engineering.

N.B.—Students of the Second, Third and Fourth Years will be guided both as to curriculum and fees by the amended Calendar for 1908-09, copies of which may be obtained on application to the Secretary.

GRADUATING DEPARTMENTS.

There are seven regular Departments of Instruction:—

1. Civil Engineering.
2. Mining Engineering.
3. Mechanical Engineering.
4. Architecture.
5. Analytical and Applied Chemistry.
6. Chemical Engineering.
7. Electrical Engineering.

leading to the degree of Bachelor of Applied Science. The instruction given in these departments extends over a period of four years and is designed to give the student a thorough knowledge of the scientific principles underlying the practice in the several professions, and also such a training as may make him immediately useful when he commences professional work.

PROFESSIONAL DEGREES.

Bachelors of Applied Science may, after three years spent in professional work, present themselves for the degrees of Civil Engineer (C.E.), Mining Engineer (M.E.), Mechanical Engineer (M.E.), Electrical Engineer (E.E.), or Chemical Engineer (Chem.E.), as the case may be, subject to the rules and regulations established by the University. (See page 71).

FELLOWSHIPS.

Sessional Fellowships of the value of \$500 each are awarded annually in the various departments.

The Fellows are required to take such portions of the work of instruction as may be assigned to them by the Council.

Applications for these fellowships are to be made annually in writing to the Secretary of the Faculty on or before the 1st day of May.

ADMISSION AND REGISTRATION.

For the session 1909-1910 candidates will be admitted as undergraduate students in any of the regular departments of instruction on presenting satisfactory certificates of having passed the Junior or Senior Matriculation examination or its equivalent as defined hereafter; or of having passed in all the required subjects of such examination except Latin.

For the session 1910-1911 the minimum requirement for admission as an undergraduate student in any of the departments of instruction will be:—

Junior Matriculation, except that Latin shall be optional; *i.e.*, the candidate must pass in English, History, Mathematics and any three of the following, *viz.*, Greek, Latin, French, German, Experimental Science. A candidate who has obtained Honours in Mathematics need pass in only two of the optional subjects.

Candidates may register in the various years on and after Sept. 1st. Application forms will be supplied on request, by the Secretary.

JUNIOR MATRICULATION.

GENERAL REGULATIONS.

Candidates for Junior Matriculation must produce satisfactory certificates of good character and of having completed the sixteenth year of their age.

The subjects of Junior Matriculation are as follows:—Latin, English, History, Mathematics and any two of the following: Greek, German, French, Experimental Science.

Pass and honour papers will be set in each of these subjects.

The pass papers are as follows:—Latin authors, Latin composition; English grammar, English composition, English literature; History; Arithmetic, Algebra, Plane Geometry; Greek authors, Greek composition; German authors, German composition; French authors, French composition; Experimental Science.

The pass standard is forty per cent. of the marks assigned to a paper.

Further particulars may be obtained on application to the Registrar for curriculum for Junior Matriculation.

Candidates who have obtained pass standing in at least a majority of the subjects may complete Junior Matriculation by passing in the remaining subjects at a subsequent examination or examinations.

The examination for pass and honour Junior Matriculation is held annually in July at centres in Ontario, and, if application is made to the Senate, the examination may, with the co-operation of the Department of Education, be held at centres outside Ontario.

Applications accompanied by the fee of \$5.00 must be sent not later than the 24th of May to the local Public School Inspector, or in the case of candidates intending to write at the University, to the Registrar.

A Junior Matriculation examination, at which no honour papers are set, will be held in September at the University and at such other centres as may from time to time be authorized by the Senate. Candi-

dates who have failed in a minority of subjects at a previous examination as well as new candidates, may present themselves at this examination. Applications must be sent to the Registrar not later than the 1st of September.

EQUIVALENT EXAMINATIONS.

A person who has passed the matriculation examination of another University may be admitted *ad eundem statum* on such conditions as the Senate, on application, may prescribe.

The local examinations conducted by the University of Oxford and Cambridge are accepted *pro tanto*.

Certificates of having passed the whole, or at least one-half, of the subjects common to the matriculation and other examination of any of the following examinations will be accepted *pro tanto*.

Province of Ontario.

The Junior and Senior Teachers' examinations, or examinations of the same standard under other names.

Province of Quebec.

The Associate in Arts examination.

Province of New Brunswick.

The examinations for Superior and Grammar School Licenses.

Province of Nova Scotia.

The Junior and Senior Leaving examinations (Grades XI. and XII.).

Province of Manitoba.

The Second Class Teachers' examination.

Province of British Columbia.

The Intermediate and Senior Grade examination.

Province of Prince Edward Island.

The First Class Teachers' License examination.

Province of Alberta.

The Standard VII. and VIII. examinations.

Province of Saskatchewan.

The Standard VII. and VIII. examinations.

Newfoundland.

Intermediate and Associate Grade examinations.

Candidates whose certificates do not cover all the subjects may complete matriculation by passing in the remaining subjects as prescribed by the University, or by passing in the subjects of similar standard as prescribed by the Education Department of the Province by which the certificate was issued.

Other Certificates.

The Senate will consider applications for the recognition of certificates other than those mentioned, as occasion may require.

ADMISSION AD EUNDEM STATUM.

An undergraduate of another University may be admitted *ad eundem statum* on such conditions as the Senate on the recommendation of the Council of the Faculty may prescribe.

An applicant for admission *ad eundem statum* must submit with his petition (1) a calendar of his University giving a full statement of the courses of instruction; (2) an official certificate of character and academic standing.

FEEES.

The annual fees including tuition, library, laboratory supplies and one annual examination shall be as follows:—

First Year.

If paid in full on or before November 5th.....\$100.00

By instalments:

First instalment, if paid on or before November 5th.. 50.00

Second instalment, if paid on or before February 5th.. 55.00

Second Year.

If paid in full on or before November 5th.....110.00

By instalments:

First instalment, if paid on or before November 5th.... 55.00

Second instalment, if paid on or before February 5th.. 60.00

Third and Fourth Years.

If paid in full on or before November 5th.....120.00

By instalments:

First instalment, if paid on or before November 5th.. 60.00

Second instalment, if paid on or before February 5th... 65.00

The above fees are payable in advance. After November 5th a penalty of \$1.00 per month will be imposed until the whole amount is paid. In the case of payment by instalments the same rule as to penalty will apply.

General Fees.

Matriculation, or registration of Matriculation.....	\$ 5.00
Supplemental examination	10.00
Admission ad eundem statum	10.00
Degree of B.A.Sc.	10.00

In the case of candidates for the final examination, the fee for the degree must be paid to the Bursar not later than the 1st of April.

Dues and Deposits.

Engineering Society membership	\$1.00
Annual deposit	2.00

Charges for waste, neglect and breakage are to be met out of the deposit fee, the balance of which will be refunded to the student at the end of the session. This deposit together with the Engineering Society fee is to be paid to the Secretary of the Faculty at the time of registration.

LODGING AND BOARD.

Accommodation is readily obtainable in numerous private boarding-houses within convenient distance of the University, at a cost of from four dollars and a half a week upwards for comfortable lodging with board; or rooms may be rented at a cost from one dollar and a half per week upwards, and board obtained separately at moderate rates. A list of accredited boarding-houses is kept by the Secretary of the University Young Men's Christian Association, and students are recommended to consult him with reference to the selection of suitable accommodation.

UNIVERSITY RESIDENCES.

The attention of students is directed to the accommodation which has been provided in the new residences situated within the University grounds. These residences will accommodate in all about one hundred and fifty men. Every reasonable comfort is supplied.

The room rental varies from two dollars to three dollars per week, and suitable board may be conveniently obtained at the University Dining Hall at three dollars per week.

The residences and dining hall are under University management.

Applications for rooms should be made in writing to the Registrar of the University at as early a date as possible.

REGULATIONS RESPECTING STUDENTS.

No student will be enrolled in any year, or be allowed to continue in attendance, whose presence for any cause is deemed by the Council to be prejudicial to the interests of the University.

All interference on the part of any student with the personal liberty of another, by arresting him, or summoning him to appear before any tribunal of students, or otherwise subjecting him to any indignity or personal violence, is forbidden by the Council. In particular, students of all Faculties are warned against the practices known as the "hustling" of freshmen and against inter-year or inter-faculty "hustles." Any student convicted of participation in such proceedings will render himself liable to expulsion from the University.

All students shall be in attendance during the whole of each term, unless exempted by special permission of the Council.

A student who in either term of the session, fails to perform the work of his course in a manner satisfactory to the professors in charge, will not be allowed to present himself at the final examinations of the year except by special permission of the Council.

Information as to the text books, instruments and materials to be purchased by the students will be given on registration at the beginning of the session.

REGULATIONS RESPECTING EXAMINATIONS.

Regular Examinations.

Candidates are required to send to the Secretary of the Faculty at least three weeks before the commencement of the Annual Examinations in April, notice in writing of their intention to take such examinations.

No student will be allowed to write at the Annual Examinations who has not paid all fees and dues for which he is liable.

The minimum percentage of marks required to pass in the written examinations will be fixed from time to time by the Council.

The minimum percentage of marks required to pass in the practical work connected with any subject shall be one and one-half times the minimum required in the case of a written examination.

In order to pass the practical examinations in the subjects of applied mechanics, descriptive geometry, electrical design, optics, surveying and architecture, the drawings set in these subjects must be made.

Candidates who fail in passing the Annual Examinations will be required to take again the whole course of instruction, both theoretical and practical, of the year in which they fail before presenting themselves a second time for examination.

Supplemental Examinations.

A candidate who fails in one or two subjects at the annual examinations, will be required to take supplemental examinations in such subjects.

The supplemental written examinations will begin on the 20th of September, 1909.

Candidates are required to send to the Secretary of the Faculty at least three weeks before the commencement of the Supplemental Examinations in September, notice in writing of their intention to take such examinations. This notice must be accompanied by the fee of \$10.00.

In the case where a candidate fails to pass a supplemental examination it will count as one of the two supplemental examinations which may be allowed him after the next annual examination.

Vacation Work.

Vacation work must be handed in, on or before the first day of the session.

Vacation notes must be on construction only, except in Department 2 (see p. 71), and contain not less than twenty, nor more than thirty pages of sketches. These sketches must be free-hand pencil drawings with figured dimensions.

No notes, whether taken during the session or the vacation will be counted unless made in the standard note books of the Faculty.

The minimum percentage of marks required for practical work must be made in the case of vacation notes.

Honours.

Honours will be granted in each department to the students who pass in all the subjects and obtain at least 66 per cent. of the total number of marks allotted to the department at the annual examinations.

Papers read before the Engineering Society may be considered in granting Honours.

REGULATIONS RESPECTING LABORATORY WORK.

Students working in any laboratory must be governed by the regulations relating thereto as made known from time to time.

No laboratory reports or drawings may be removed from the laboratories without permission. The Council reserves the right to dispose of them as may be thought proper.

Field Work.

No field notes will be counted which have not been taken in the field, and during the hours allotted to such work.

Students taking practical astronomy are required to take observations in the field for time, latitude, and azimuth.

Drafting Rooms.

Drawings prescribed for the first term of the session will not be counted unless finished in that term.

The minimum number of drawings shall be twenty-five, and the maximum number thirty-five, except in the Department of Analytical and Applied Chemistry, in which the number shall be fifteen and twenty-five respectively.

No drawings will be counted which have not been made in the drafting rooms, and during the hours allotted to such work.

Thesis.

In the Fourth Year each student is required to prepare a thesis on a subject approved by the Council. Except in cases where the Council gives permission to the contrary before the thesis is begun, the title of the thesis must be sent to the Council for approval before the regular meeting in November. The completed thesis must be handed to the Secretary of the Faculty not later than the first day of the second term and shall become the property of the University. Applications for extension of time beyond the date given must be made to the Council before the regular meeting in December.

Shopwork.

In addition to taking the regular course of instruction and passing the requisite examinations, all students in Mechanical and in Electrical Engineering will be required to present satisfactory evidence of having had at least eight months' good practical experience in one of the principal trades connected with mechanical work, such as machinist, pattern-maker, moulder, steam engineer, etc., before receiving the degree. There is no restriction as to the place where the candidate may have gained such practical experience.

EXEMPTIONS.

Applications for exemption from any of the regulations must be made to the Council in writing and the particulars of the case fully stated.

REGULAR EXAMINATIONS.

(APPROXIMATE LIST.)

I. YEAR.

Examinations Held at the End of the Session.

Algebra.	1,2,3,4,5,6,7.	Inorganic Chemistry	5,6.
Plane Trigonometry .	1,2,3,4,5,6,7.	History and Principles of	
Analytical Geometry .	1,2,3,4,5,6,7.	Architecture	4.
Descriptive Geometry .	1,2,3,4,6,7.	Elementary Mineralogy	5.
Surveying.	1,2,4.	English	1,2,3,4,5,6,7.
Statics	1,2,3,4,6,7.	French or German	1,2,3,7.
Dynamics.	1,2,3,4,6,7.	French.	4.
Electricity and Magnetism.	3,5,6,7.	German.	5,6.
Electric Circuits	3,5,6,7.	Accounts.	1,2,3,4,5,6,7.
Elementary Chemistry		Biology	5.
	1,2,3,4,5,6,7.		

Examinations Held During the Session.

Drawing	1,2,3,4,5,6,7.
Surveying	1,2,4.
Architectural Sketches	4.
Experimental Electricity	3,5,6,7.
Practical Chemistry	2,5,6.
Mineralogy	5.
Biology	5.

- | | |
|----------------------------|--------------------------------------|
| 1. Civil Engineering. | 5. Analytical and Applied Chemistry. |
| 2. Mining Engineering. | 6. Chemical Engineering. |
| 3. Mechanical Engineering. | 7. Electrical Engineering. |
| 4. Architecture. | |

II. YEAR.

Examinations Held at the End of the Session.

Calculus	1,2,3,4,(5),6,7.	Analytical Chemistry	5.
Spherical Trigonometry	1,2.	Industrial Chemistry	5,6.
Astronomy.	1,2.	Optics.	1,2,3,4,5,6,7.
Descriptive Geometry . .	1,2,3,4,6,7.	Hydrostatics.	1,2,3,4,5,6,7.
Surveying	1,2,4.	Architectural Design	4.
Dynamics of Rotation . . .	1,2,3,7.	History of Architecture	4.
Theory of Mechanism	3,7.	Orders of Architecture	4.
Steam Engine	3,7.	History of Ornament	4.
Strength of Materials. .	1,2,3,4,6,7.	Mineralogy	1,2,6.
Electricity.	3,5,6,7.	Geology.	2,5.
Engineering Chemistry . .	1,2,3,4,5,6,7.	French or German	1,2,3,7.
Organic Chemistry	1,2,3,4,7.	French.	4.
Organic Chemistry	5,6.	German.	5,6.
Inorganic Chemistry	5,6.	Limited Companies . .	1,2,3,4,5,6,7.
Physical Chemistry	5,6.	Biology	(5).

Examinations Held During the Session.

Drawing.	1,2,3,4,6,7.
Surveying	1,2,4.
Construction Notes	1,2,3,4,5,6,7.
Architectural Sketches	4.
Architectural Design	4.
Experimental Optics	1,2,3,4,5,6,7.
Experimental Hydrostatics	1,2,3,4,5,6,7.
Experimental Electricity	3,5,6,7.
Practical Chemistry	1,2,3,4,7.
Practical Chemistry (Quantitative)	2,5,6.
Mineralogy	1,2,5,6.
Biology	5.

III. YEAR.

Examinations Held at the End of the Session.

Method of Least Squares.....1,	Magnetism and Electricity .3,6,7.
Descriptive Geometry .....1,2,4.	Alternating Current .....7.
Astronomy and Geodesy .....1.	Electrical Design .....7.
Surveying and Levelling .....1,2.	Hydrostatics. ....6.
Theory of Construction ...1,2,3,4.	Electrochemistry5,6,7.
Hydraulics1,2,3,6,7.	Acoustics4.
Heat1,2,4,5,6.	Building Materials4.
Engineering Chemistry 1,2,3,5,6,7.	History of Architecture4.
Metallurgy.1,2,3,5,6,7.	History of Ornament4.
Geology1,2,5.	Architectural Design4.
Cements and Concrete .....1,4.	Design of Tall Buildings.....4.
Elementary Petrography .....2.	Organic Chemistry5,6.
Ore Deposits2.	Industrial Chemistry5,6.
Mining and Ore Dressing .....2.	Analytical Chemistry6.
Electricity2.	Crystallography2,5.
Mechanics of Machinery .....3,7.	Chemical Plant5.
Machine Design3,7.	Banking and Finance.1,2,3,4,5,6,7.
Thermodynamics3,6,7.	German.5,6.
Heat Engines3.	

Examinations Held During the Session.

Drawing1,2,3,4,6,7.
Surveying1,2.
Strength of Materials1,3,4.
Astronomy and Geodesy1.
Photography1,3,4,7.
Hydraulics1,2.
Heat1,2,4,5,6.
Chemistry2,5,6.
Mineralogy2.
Petrography2.
Assaying2,5.
Electricity3,6,7.
Mechanical Laboratory3,6,7.
Electrochemistry5,6,7.
Acoustics4.
Architectural Sketches4.
Architectural Design4.
Crystallography2,5.
Construction Notes1,2,3,4,5,6,7.

IV. YEAR.

Examinations Held at the End of the Session.

(DEPENDENT UPON THE SELECTED OPTIONS.)

Retaining Walls, Foundations and Dams.	Alternating Current.
Thermodynamics.	Applied Electricity.
Electricity.	Electrochemistry.
Geology.	Electrometallurgy.
Astronomy and Geodesy.	Heating and Ventilating.
Hydraulics.	Architectural Design.
Strength of Materials.	Inorganic Chemistry.
Railway Engineering.	Organic Chemistry.
Mineralogy.	Industrial Chemistry.
Metallurgy.	Sanitary and Forensic Chemistry.
Mining.	Sanitary Chemistry and Bacteriology.
Ore Dressing.	Contracts and specifications.
Machine Design.	Cost Keeping.
Mill Design.	

Examinations held during the Session.

Thesis.	Laboratory Course on Options Selected.
---------	--

DEPARTMENT OF CIVIL ENGINEERING.

Department 1.

The courses of study in Civil Engineering are designed to give the student a sound training in the fundamental scientific principles on which the practice of the profession is based. The instruction is given by means of lectures and practical work in the field, the drafting room and the laboratory. In this way the student is led to apply the principles developed in the class room.

Formerly the term Civil Engineering included all the branches of the profession, but some of these became so extensive as to acquire distinctive names and fields of work for themselves. Even yet Civil Engineering is so comprehensive as to render it impossible for anyone to master all its branches. It may be said to include surveying and topography; works connected with transportation, such as railroads and canals; municipal works, such as waterworks, sewers, streets and pavements; hydraulic works, such as power development, drainage, irrigation, etc.; structural works, such as bridges, roofs, etc.

Notwithstanding the variety of the branches of Civil Engineering above enumerated, they are underlaid by a comparatively compact body of scientific principles which form the basis of the work of instruction. While the subjects of the first year are largely fundamental, an effort is made, it is thought successfully, to give a professional aspect to the student's work from the very beginning. This is accomplished by the introduction of such subjects as field work and plotting in the curriculum of the first year. In the second and third years the study of fundamental science is continued together with its application to the solution of engineering problems. In the fourth year the student may elect to follow certain optional subjects, which form a continuation of the work of the previous years. Here special stress is laid upon experimental work in the laboratory.

SUBJECTS OF INSTRUCTION.

I. YEAR.

(1909-1910 AND THEREAFTER.)

LECTURE COURSES.

	PAGE.		PAGE.
Algebra	50	Dynamics	52
Plane Trigonometry	51	Elementary Chemistry	44
Analytical Geometry	50	English	58
Descriptive Geometry	46	French or German	58
Surveying	59	Accounts	44
Statics	54		

LABORATORY COURSES.

Drawing	62	Surveying	70
---------------	----	-----------------	----

II. YEAR.

(1910-1911 AND THEREAFTER.)

LECTURE COURSES.

	PAGE.		PAGE.
Calculus	50	French or German	58
Spherical Trigonometry	51	Engineering Chemistry	44
Elementary Astronomy	42	Organic Chemistry	45
Descriptive Geometry	47	Optics	58
Surveying	59	Hydrostatics	53
Dynamics of Rotation	52	Mineralogy	57
Strength of Materials	55	Limited Companies	44

LABORATORY COURSES.

	PAGE.		PAGE.
Drawing	63	Hydrostatics	66
Surveying	70	Chemistry	61
Optics	69	Determinative Mineralogy	68

VACATION WORK.

Construction Notes, see page 71

III. YEAR.

(1911-1912 AND THEREAFTER.)

LECTURE COURSES.

	PAGE.		PAGE.
Least Squares	51	Banking & Finance	44
Practical Astronomy & Geodesy	42	Theory of Construction	55
Descriptive Geometry	47	Engineering Chemistry	44
Surveying and Levelling	59	Economic Geology	49
Hydraulics	53	Dynamic & Structural Geology	49
Metallurgy of Iron & Steel....	57	Heat	58
		Cements & Concrete	51

LABORATORY COURSES.

	PAGE.		PAGE.
Drawing	63	Heat	69
Surveying	70	Strength of Materials	66
Photography	69	Hydraulics	66
Astronomy & Geodesy	60		

VACATION WORK.

Construction Notes, see page 71.

IV. YEAR.

(1912-1913 AND THEREAFTER.)

LECTURE COURSES.

	PAGE.		PAGE.
Retaining Walls, Foundations & Dams	52	And Astronomy & Geodesy	43
Electricity	48	or two of the following:	
Thermodynamics	56	(b) Hydraulics	53
Geology	49	(c) Strength of Materials	55
Contracts & Specifications	44	(e) Railway Engineering	59
		(k) Sanitary Chemistry & Bac- teriology	46

LABORATORY COURSES.

According to option selected.	Thesis	19
-------------------------------	--------------	----

DEPARTMENT OF MINING ENGINEERING.

Department 2.

The course in Mining Engineering is intended to serve as a preliminary training for those who expect to practice the art of mining or metallurgy. In the first two years it differs very little from the course in civil engineering, in the third year some subjects peculiar to mining and metallurgy are taken up. In the fourth year the subjects are more particularly those of mining and metallurgy. By the choice of subject for thesis in the fourth year the student can follow his particular branch still further, and devote about one-quarter of the time in that year to the part of the studies which interests him most.

In general this course is designed to first give the student a good training in the parts of engineering essential to all branches such as surveying, drafting, etc., and then in the upper years to allow him to follow studies peculiar to mining engineering.

SUBJECTS OF INSTRUCTION.

I. YEAR.

(1909-1910 AND THEREAFTER.)

LECTURE COURSES.

	PAGE.		PAGE.
Algebra	50	Statics	54
Plane Trigonometry	51	Dynamics	52
Analytical Geometry	50	Elementary Chemistry	44
Descriptive Geometry	46	German	58
Surveying	59	Accounts	44
English	58		

LABORATORY COURSES.

	PAGE.		PAGE.
Drawing	62	Chemistry	61
Surveying	70		

II. YEAR.

(1910-1911 AND THEREAFTER.)

LECTURE COURSES.

	PAGE.		PAGE.
Calculus	50	Limited Companies	44
Spherical Trigonometry	51	Organic Chemistry	45
Descriptive Geometry	47	Optics	58
Surveying	59	Hydrostatics	53
Dynamics of Rotation	52	Geology	49
Strength of Materials	55	Mineralogy	57
Engineering Chemistry	44	Elementary Astronomy	42
German	58		

LABORATORY COURSES.

	PAGE.		PAGE.
Drawing	63	Hydrostatics	66
Surveying	70	Chemistry	61
Optics	69	Determinative Mineralogy	68
Photography	69		

VACATION WORK.

Construction Notes, see page 71.

III. YEAR.

(1911-1912 AND THEREAFTER.)

LECTURE COURSES.

	PAGE.		PAGE.
Descriptive Geometry	47	Metallurgy of Gold, Silver, etc.	57
Surveying & Levelling	59	Ore Deposits	49
Hydraulics	53	Mining and Ore Dressing	58
Theory of Construction	55	Economic Geology	49
Engineering Chemistry	44	Dynamic & Structural Geology	49
Metallurgy of Iron & Steel....	57	Heat	58
Banking & Finance	44	Lithology	57
Analytical Chemistry	44		

LABORATORY COURSES.

	PAGE.		PAGE.
Drawing	63	Determinative Mineralogy	68
Surveying	70	Crystallography	57
Heat	69	Assaying	60
Chemistry	62		

VACATION WORK.

Construction Notes, see page 71.

IV. YEAR.

(1912-1913 AND THEREAFTER.)

LECTURE COURSES.

	PAGE.		PAGE.
Thermodynamics	56	Mining	58
Electricity	48	Ore Dressing	58
Mineralogy	57	Metallurgy of Gold & Silver..	57
Geology	49	Cost-keeping, etc.	44
Thesis	19		

LABORATORY COURSES.

	PAGE.		PAGE.
Mineralogy	68	Milling	69
Metallurgy	69	Assaying	60
Thesis	19		

DEPARTMENT OF MECHANICAL ENGINEERING.

Department 3.

The course in this Department is designed to meet the needs of those students who are intending to take up the work connected with Mechanical Engineering such as: the design of gas engines, steam engines, steam boilers, steam turbines, air compressors, etc.; the design and installation of the machinery connected with power plants and central stations, steam piping and other similar problems. The work is also so arranged that the student becomes somewhat familiar with the design of travelling cranes and mill buildings and similar problems connected with structural steel work.

Since the work of the mechanical engineer and of the electrical engineer are closely allied, the courses in these two departments in the first two years are identical and cover the subjects mentioned below.

In the third year the work becomes more specialized, the mechanical engineers paying more attention to heat engines of various types, and to mill building design and other work of similar nature. The study of electricity is continued and the student gets considerable practice in the mechanical and electrical laboratories.

In the fourth year the student devotes himself still more closely to his chosen work, placing the greater stress on thermodynamics and the theory and testing of heat engines, and problems in machine design. Much time is spent in the mechanical laboratories testing gas and steam engines and other machines. A portion of the time is devoted to electricity and the laboratory connected therewith.

Shops have not been provided by the University, but the student is obliged to spend a considerable time in regular shops, a plan which is believed to be of more value to him. See special regulations.

SUBJECTS OF INSTRUCTION.

I. YEAR.

(1909-1910 AND THEREAFTER.)

LECTURE COURSES.

	PAGE.		PAGE.
Algebra	50	Statics	54
Plane Trigonometry	51	Dynamics	52
Analytical Geometry	50	Electricity & Magnetism	47
Descriptive Geometry	46	Electric Circuits	47
French or German	58	Elementary Chemistry	44
Accounts	44	English	58

LABORATORY COURSES.

	PAGE.		PAGE.
Drawing	62	Electricity	64

II. YEAR.

(1910-1911 AND THEREAFTER.)

LECTURE COURSES.

	PAGE.		PAGE.
Calculus	50	Limited Companies	44
Descriptive Geometry	47	Electricity	47
Dynamics of Rotation	52	Engineering Chemistry	44
Theory of Mechanism	56	Organic Chemistry	45
Steam Engines	55	Optics	58
Strength of Materials	55	Hydrostatics	53
French or German	58		

LABORATORY COURSES.

	PAGE.		PAGE.
Drawing	63	Electricity	64
Optics	69	Chemistry	61
Hydrostatics	66		

VACATION WORK.

Construction Notes, see page 71.

III. YEAR.

(1911-1912 AND THEREAFTER.)

LECTURE COURSES.

	PAGE.		PAGE.
Mechanics of Machinery	54	Metallurgy of Iron & Steel ...	57
Machine Design	54	Banking & Finance	44
Thermodynamics	56	Alternating Current	48
Heat Engines	52	Engineering Chemistry	44
Hydraulics	53	Theory of Construction	55
Magnetism & Electricity	48		

LABORATORY COURSES.

	PAGE.		PAGE.
Drawing	63	Mechanics	66
Electricity	65	Strength of Materials	66
Photography	69		

VACATION WORK.

Construction Notes, see page 71.

IV. YEAR.

(1912-1913 AND THEREAFTER.)

LECTURE COURSES.

	PAGE.		PAGE.
Mill Design	54	And two of the following:	
Alternating Current	48	(b) Hydraulics	53
Cost-keeping, etc.	44	(c) Strength of Materials	55
Machine Design	54	(d) Thermodynamics	56

LABORATORY COURSES.

Mill Design, electricity and selected option.	Thesis, see page	19
--	------------------------	----

DEPARTMENT OF ARCHITECTURE.

Department 4.

The instruction in this department is arranged to lay a broad foundation for the subsequent professional life of its graduates, and incidentally, to prepare its students to be immediately useful in an architect's office. The curriculum has been arranged to meet the æsthetic and scientific needs of the profession, and includes History and Principles of Architecture, Freehand Drawing in pencil, ink and color, Architectural Design, Analysis and Criticism of Buildings, Mathematics, Statics, Strength and Elasticity of Materials, Theory of Construction and Heating and Ventilation.

The equipment of the department includes a working library of 1,000 volumes, a large file of periodicals, 2,500 photographs, 2,000 stereographic photos, 4,500 lantern slides, and a large collection of models and casts.

SUBJECTS OF INSTRUCTION.

I. YEAR.

(1909-1910 AND THEREAFTER.)

LECTURE COURSES.

PAGE.	PAGE.
Algebra 50	Elementary Chemistry 44
Plane Trigonometry 51	History & Principles of Archi- tecture 41
Analytical Geometry 50	English 58
Descriptive Geometry 46	French 58
Surveying 59	Accounts 44
Statics 54	
Dynamics 52	

LABORATORY COURSES.

PAGE.	PAGE.
Drawing 62	Architectural Sketching 60
Surveying 70	

II. YEAR.

(1910-1911 AND THEREAFTER.)

LECTURE COURSES.

PAGE.	PAGE.
Calculus 50	Hydrostatics 53
Descriptive Geometry 47	Architectural Design 41
Surveying 59	History of Architecture 41
Strength of Materials 55	Orders of Architecture 41
Engineering Chemistry 44	History of Ornament 41
Organic Chemistry 45	French 58
Optics 58	Limited Companies 44

LABORATORY COURSES.

	PAGE.		PAGE.
Drawing	63	Chemistry	61
Surveying	70	Architectural Design	60
Optics	69	Architectural Sketching	60
Hydrostatics	66		

VACATION WORK.

Construction Notes, see page 71.

III. YEAR.

(1911-1912 AND THEREAFTER.)

LECTURE COURSES.

	PAGE.		PAGE.
Descriptive Geometry	47	Heat	58
Acoustics	58	Banking & Finance	44
History of Architecture	41	Building Materials	41
History & Principles of Orna- ment	41	Design of Tall Buildings	42
Architectural Design	42	Theory of Construction	55
		Cements, etc.	51

LABORATORY COURSES.

	PAGE.		PAGE.
Drawing	63	Acoustics	58
Architectural Sketching	60	Architectural Design	60
Heat	69	Photography	69
Strength of Materials	66		

VACATION WORK.

Construction Notes, see page 71.

IV. YEAR.

(1912-1913 AND THEREAFTER.)

LECTURE COURSES.

	PAGE.		PAGE.
Strength of Materials	55	Sanitary Science	42
Electricity	48	Architectural Design	42
Heating & Ventilation	42	Contracts & Specifications	44

LABORATORY COURSES.

	PAGE.		PAGE.
Strength of Materials	67	Thesis	19
Architectural Design	60		

DEPARTMENT OF ANALYTICAL AND APPLIED CHEMISTRY.

Department 5.

The course in Analytical and Applied Chemistry is designed to furnish instruction suitable for those students who intend to practice chemistry as a profession, either as analysts or as works chemists.

SUBJECTS OF INSTRUCTION.

I. YEAR.

(1909-1910 AND THEREAFTER.)

LECTURE COURSES.

	PAGE.		PAGE.
Algebra	50	Electric Circuits	47
Plane Trigonometry	51	Elementary Chemistry	44
Analytical Geometry	50	Elementary Mineralogy	57
Electricity & Magnetism	47	English	58
Biology	43	German	58
Accounts	44	Inorganic Chemistry	45

LABORATORY COURSES.

	PAGE.		PAGE.
Drawing	62	Determinative Mineralogy	68
Electricity	64	Biology	60
Chemistry	61		

II. YEAR.

(1910-1911 AND THEREAFTER.)

LECTURE COURSES.

	PAGE.		PAGE.
Electricity	47	Optics	58
Engineering Chemistry	44	Hydrostatics	53
Industrial Chemistry	45	Geology	49
Organic Chemistry	45	Limited Companies	44
Physical Chemistry	46	Calculus or Biology	50 or 43
Inorganic Chemistry	45	German	58
Analytical Chemistry	44		

LABORATORY COURSES.

	PAGE.		PAGE.
Optics	69	Chemistry	61
Hydrostatics	66	Determinative Mineralogy	68
Electricity	64	Biology	60

III. YEAR.

(1911-1912 AND THEREAFTER.)

LECTURE COURSES.

	PAGE.		PAGE.
Electrochemistry	45	Metallurgy	57
Engineering Chemistry	44	Economic Geology	49
Industrial Chemistry	45	Dynamic & Structural Geology	49
Organic Chemistry A	45	Heat	58
Organic Chemistry B	45	Crystallography	57
Chemical Plant		German	58
Banking and Finance	44		

LABORATORY COURSES.

	PAGE.		PAGE.
Electrochemistry	62	Assaying	60
Chemistry	62	Heat	69
Crystallography	57		

IV. YEAR.

(1912-1913 AND THEREAFTER.)

LECTURE COURSES.

	PAGE.		PAGE.
Inorganic Chemistry	46	(g) Industrial Chemistry	46
Organic Chemistry	46	(h) Sanitary & Forensic Chem-	
Cost-keeping, etc.	44	istry.	46
And one of the following:		(i) Metallurgy	57
(f) Electrochemistry	45		

LABORATORY COURSES.

	PAGE.		PAGE.
Chemistry	62	Thesis	19

DEPARTMENT OF CHEMICAL ENGINEERING.**Department 6.**

In many industries there is a demand for a man who combines the technical knowledge of the mechanical engineer with a knowledge of chemistry. It is to fill this want that the course of Chemical Engineering is designed.

SUBJECTS OF INSTRUCTION.**I. YEAR.**

(1909-1910 AND THEREAFTER.)

LECTURE COURSES.

	PAGE.		PAGE.
Algebra	50	Electric Circuits	47
Plane Trigonometry	51	Elementary Chemistry	44
Analytical Geometry	50	Inorganic Chemistry	45
Descriptive Geometry	46	English	58
Statics	54	German	58
Dynamics	52	Accounts	44
Electricity & Magnetism	47		

LABORATORY COURSES.

	PAGE.		PAGE.
Drawing	62	Chemistry	61
Electricity	64		

II. YEAR.

(1910-1911 AND THEREAFTER.)

LECTURE COURSES.

	PAGE.		PAGE.
Calculus	50	Physical Chemistry	46
Descriptive Geometry	47	Inorganic Chemistry	45
Strength of Materials	55	Optics	58
Electricity	47	Hydrostatics	53
Engineering Chemistry	44	Mineralogy	57
Industrial Chemistry	45	German	58
Organic Chemistry	45	Limited Companies	44

LABORATORY COURSES.

	PAGE.		PAGE.
Drawing	63	Electricity	64
Optics	69	Chemistry	61
Hydrostatics	66	Mineralogy	68

VACATION WORK.

Construction Notes, see page 71.

III. YEAR.

(1911-1912 AND THEREAFTER.)

LECTURE COURSES.

	PAGE.		PAGE.
Hydraulics	53	Industrial Chemistry	45
Thermodynamics	56	Analytical Chemistry	44
Electricity	48	Metallurgy	57
Electrochemistry	45	Heat	58
Engineering Chemistry	44	Banking & Finance	44
Organic Chemistry	45	German	58

LABORATORY COURSES.

	PAGE.		PAGE.
Drawing	63	Chemistry	62
Electricity	65	Heat	69
Electrochemistry	62	Mechanics	67

VACATION WORK.

Construction Notes, see page 71.

IV. YEAR.

(1912-1913 AND THEREAFTER.)

LECTURE COURSES.

	PAGE.		PAGE.
Inorganic Chemistry	46	And one of:	
Organic Chemistry	46	(f) Electrochemistry	45
Metallurgy	57	(g) Industrial Chemistry	46
Cost-keeping, etc.	44	(h) Sanitary & Forensic Chem- istry	46

LABORATORY COURSES.

	PAGE.		PAGE.
Chemistry	62	Thesis	19

DEPARTMENT OF ELECTRICAL ENGINEERING.

Department 7.

The course of study in the Department of Electrical Engineering is intended to give a training useful as a general introduction to the various occupations comprised in the field of electrical engineering, and also, though with less specialization than in Department 3, to fulfil a similar purpose for mechanical engineering.

In the first two years the work in the Departments of Mechanical Engineering and Electrical Engineering is the same, and includes mathematics, chemistry, mechanics, electricity, metallurgy, surveying, drawing, etc., treated broadly, yet with a view toward engineering applications.

In the third year the students in this department together with those of Department 3, are given instruction in hydraulics, thermodynamics, electricity, engineering chemistry, theory of stresses in stationary and moving structures; and in the time which the latter students devote to more specialized work in mechanical engineering, they pursue the subjects of electrochemistry, design of electrical machinery, and take up more fully the theory and operation of alternating and direct current apparatus.

The fourth year is devoted to more advanced study in a few subjects chosen by each student from certain groups made possible by his previous work. Most of the time is spent in laboratory investigations and studies resulting therefrom.

During the whole course considerable time is devoted to work in various laboratories described elsewhere.

Shops have not been provided by the University, but the student is obliged to spend a considerable time in regular shops, a plan which is believed to be of more value to him. See special regulations.

SUBJECTS OF INSTRUCTION.

I. YEAR.

(1909-1910 AND THEREAFTER.)

LECTURE COURSES.

	PAGE.		PAGE.
Algebra	50	Electricity	47
Plane Trigonometry	51	Chemistry	44
Analytical Geometry	50	English	58
Descriptive Geometry	46	French or German	58
Statics	54	Accounts	44
Dynamics	52		

LABORATORY COURSES.

	PAGE.		PAGE.
Drawing	62	Electricity	64

II. YEAR.

(1910-1911 AND THEREAFTER.)

LECTURE COURSES.

	PAGE.		PAGE.
Calculus	50	Strength of Materials	55
Descriptive Geometry	47	Theory of Mechanism	56
Optics	58	Steam Engine	55
Hydrostatics	53	Electricity	47
Dynamics	52	Engineering Chemistry	45
Limited Companies	44	French or German	58

LABORATORY COURSES.

	PAGE.		PAGE.
Drawing	63	Optics	69
Electricity	64	Hydrostatics	66
Chemistry	61		

VACATION WORK.

Construction Notes, see page 71.

III. YEAR.

(1911-1912 AND THEREAFTER.)

LECTURE COURSES.

	PAGE.		PAGE.
Theory of Construction	55	Heat Engines	52
Mechanics of Machinery	54	Magnetism & Electricity	48
Machine Design	54	Engineering Chemistry	44
Hydraulics	53	Metallurgy	57
Thermodynamics	56	Banking & Finance	44

LABORATORY COURSES.

	PAGE.		PAGE.
Drawing	63	Mechanics	66
Photography	69	Strength of Materials	66
Electricity	65		

VACATION WORK.

Construction Notes, see page 71.

IV. YEAR.

(1912-1913 AND THEREAFTER.)

LECTURE COURSES.

	PAGE.		PAGE.
Applied Electricity	48	And one of the following:	
Cost-keeping, etc.	44	(b) Hydraulics	53
		(d) Thermodynamics	56
		(f) Electrochemistry	45

LABORATORY COURSES.

Applied Electricity	65	Work in option selected.
Thesis	19	

OUTLINE OF LECTURE COURSES.

ARCHITECTURE.

HISTORY OF ARCHITECTURE (Elementary).

Required in Department 4, Year I.; 1 hour per week; both terms.

In this course the development of architecture is treated very briefly and in an elementary manner, from the Pyramids of Egypt to the present, laying special emphasis on the Egyptian, Grecian and Western Asiatic work.

ARCHITECTURAL DESIGN.

Required in Department 4, Year II.

Elements of planning and composition.

HISTORY OF ARCHITECTURE.

Required in Department 4, Year II.

Classical, Early Christian, Byzantine and Romanesque.

In connection with this course of lectures the students are expected to work out a number of elementary compositions, applying the history and principles given in the previous lectures.

ORDERS OF ARCHITECTURE.

Required in Department 4, Year II.

HISTORY OF ORNAMENT.

Required in Department 4, Year II.

In this course the development is traced from the beginning through Egyptian, Assyrian, Grecian, Roman, Byzantine, Romanesque and Moresque styles. An attempt is made to analyze ornament of the best periods and to systematize the principles followed in composition of form and color.

BUILDING MATERIALS.

Required in Department 4, Year III.

The structural and aesthetic value of the various building materials.

HISTORY OF ARCHITECTURE.

Required in Department 4, Year III.

Gothic, Renaissance, Modern.

HISTORY OF ORNAMENT.

Required in Department 4, Year III.

Gothic, Renaissance, Modern.

ARCHITECTURAL DESIGN.

Required in Department 4, Year III.

Theory of Design, planning and composition, scale, proportion, expression and decoration.

DESIGN OF TALL BUILDINGS.

Required in Department 4, Year III.

The structural features particularly incident to tall buildings are taken up, such as the discussion of deep foundations, grillages, arrangement of columns and beams, fire-proofing, wind bracing, details, etc.

Designs of typical building members such as footings, columns, girders, etc., are worked out in the class and drafting rooms.

Text Books:—Architectural Engineering—J. K. Freitag; Skeleton Construction in Buildings—W. H. Birkmire.

SANITARY SCIENCE.

Required in Department 4, Year IV.

Modern plumbing, its design and installation.

HEATING AND VENTILATION.

Required in Department 4, Year IV.

The design of different systems, where they should be used, heating specifications, etc.

ARCHITECTURAL DESIGN.

Required in Department 4, Year IV.

ASTRONOMY AND GEODESY.**ASTRONOMY, ELEMENTARY.**

Required in Departments 1 and 2, Year II.

A course in descriptive Astronomy, explaining the ordinary astronomical terms, and describing the various celestial bodies and their motions. In the evenings opportunity will be given for identifying the stars and for observing with telescopes.

Text book:—Introduction to Astronomy—F. R. Moulton.

ASTRONOMY AND GEODESY.

Required in Department 1, Year III.

The course of lectures deals with the determination of time, latitude, longitude and azimuth, by methods adapted to the use of the surveyor's transit and the sextant. It is designed to fulfil the requirements of the final examinations for Ontario and Dominion Land Surveyors.

In Geodesy an account is given of the principles and methods of a secondary triangulation survey, also of the principles involved in the North-West system of survey.

Text book:—Doolittle's Practical Astronomy as applied to Geodesy and Navigation; Nautical Almanac, 1910.

ASTRONOMY.

Required in Department 1, Year IV.

The lecture course in this subject comprises the theory and adjustment of the instruments used in connection with a geodetic survey; the methods of taking and reducing observations for time, longitude, latitude, and azimuth, with the precision required on such a survey; and other matters relating to these subjects.

GEODESY AND METROLOGY.

Required in Department 1, Year IV.

The lecture course includes a description of the methods of measuring base lines, and the angles of a triangulation; the geometry of the spheroid, with applications to geodetic problems; the computation of geodetic positions; the solution of large triangles on the earth's surface, and the adjustment of a triangulation; trigonometric and precise spirit levelling; the determination of the figure of the earth by arc measurements, and by the pendulum; the theory of map projections, etc.

BIOLOGY.

ELEMENTARY BIOLOGY.

Required in Department 5, Year I; 2 hours per week.

A course of two lectures a week throughout the session is designed as an introduction of the whole range of biological studies. After a sketch of the scope and objects of these, the lectures will treat (a) of the fundamental principles of biology, as illustrated by the simplest animals and plants; (b) of typical forms of higher plants in ascending order; (c) of typical forms of animals in a similar way; and (d) of the structure and functions of the human body. Students are recommended to make use of the Biological Museum in connection with this course of lectures. For reference; Jeffrey Parker, Elementary Biology; Ramsay Wright, High School Zoology; Atkinson, Elementary Botany; Huxley, Lessons in Elementary Physiology.

ADVANCED BIOLOGY.

Optional in Department 5, Year II.

A short course of instruction in the Morphology and Physiology of Bacteria, Moulds and Yeast Fungi.

BUSINESS.**ACCOUNTING.**

Required in Year I; 1 hour per week; both terms.

The principles of accounting; illustrated by typical accounts of a trader, a manufacturer, a public service corporation and a municipality.

LIMITED COMPANIES.

Required in Year II.

Partnerships; the history and development of the limited liability company; the Companies Acts; company finance.

BANKING AND FINANCE.

Required in Year III.

Money and the instruments of credit; bond issues, loans, sinking funds, etc.

CONTRACTS AND SPECIFICATIONS.

Required in Departments 1 and 4, Year IV.

Contract law; principles of specifications.

COST-KEEPING, ETC.

Required in Departments 2, 3, 5, 6 and 7, Year IV.

Works management, accounts, analysis of costs, reports.

CHEMISTRY.**ANALYTICAL CHEMISTRY.**

Required in Department 5, Year II; Departments 2 and 6, Year III.

The principles of chemical analysis; select gravimetric and volumetric methods; technical analysis.

ELEMENTARY CHEMISTRY.

Required in Departments 1, 2, 3, 4, 5, 6 and 7, Year I; 2 hours per week; both terms.

Elementary chemistry with experimental illustrations.

Text book:—Briefer Course—Remsen.

ENGINEERING CHEMISTRY.

Required in Departments 1, 2, 3, 5, 6 and 7, Year II.

A study of the industrial production and applications of heat and light, and of the chemistry of fuel and the products of combustion.

ENGINEERING CHEMISTRY.

Required in Department 1, 2, 3, 5, 6 and 7, Year III; Department 4, Year II.

The application of chemistry to engineering problems, air, water, sewage, the materials of construction, explosives, etc.

ELECTROCHEMISTRY.

Required in Departments 5, 6 and 7, Year III.

An elementary course illustrated by experiments.

ELECTROCHEMISTRY.

Optional in Departments 5, 6 and 7, Year IV.

More advanced lectures are given on the theory of solutions and electrolysis, and the application to the practice of electro-deposition and electrolytic refining of metals. The course also includes lectures on the electric furnace, with special consideration of the efficiency.

Text books:—Electrometallurgy—Borchers; Electrochemistry—LeBlanc; Electrochemistry—Lupke.

INDUSTRIAL CHEMISTRY—INORGANIC.

Required in Departments 5 and 6, Year II.

Manufacture of salts, acids, alkalies, and inorganic chemicals.

Text book:—Industrial Chemistry—Thorp.

INDUSTRIAL CHEMISTRY—ORGANIC.

Required in Departments 5 and 6, Year III.

The study of petroleum and its products, coal tar and its products, the destructive distillation of wood, fats, oils, soap, sugar, starch, and gum; fermentation industries, etc.

Text book:—Industrial Chemistry—Thorp.

INORGANIC CHEMISTRY.

Required in Departments 5 and 6, Year I; 1 hour per week; both terms.

A study of the elements and their important inorganic compounds.

Text book:—Introduction to General Inorganic Chemistry—Alex. Smith.

INORGANIC CHEMISTRY.

Required in Departments 2, 5 and 6, Year II.

The chemistry of the metals.

ORGANIC CHEMISTRY.

Required in Departments 1, 2, 3, 4, 5, 6 and 7, Year II.

An elementary course.

Text book:—Theoretical Organic Chemistry—Cohen.

ORGANIC CHEMISTRY.

Required in Departments 5 and 6, Year II.

An elementary course dealing with the aliphatic and aromatic series of compounds.

Text book:—Theoretical Organic Chemistry—Cohen.

ORGANIC CHEMISTRY (A).

Required in Department 5, Year III.

A detailed study of the compounds of carbon.

Text book:—Organic Chemistry—Perkin and Kipping.

ORGANIC CHEMISTRY (B).

Required in Department 5, Year III.

This course includes the consideration of the several kinds of stereoisomerism, desmotropism, etc.

ORGANIC CHEMISTRY.

Required in Departments 5 and 6, Year IV.

Special chapters in organic chemistry; dyestuffs, sugars, laboratory methods, etc.

Text books:—

Lehrbuch der Organischen Chemie—Meyer und Jacobsen;
Arbeitsmethoden für organisch-chemische Laboratorien—
Lassar-Cohn; Synthetic Dye Stuffs—Cain and Thorpe;
Organic Chemistry for Advanced Students—Cohen.

PHYSICAL CHEMISTRY.

Required in Departments 5 and 6, Year II.

An introductory course on the elements of chemical mechanics, and the theory of solutions.

THEORETICAL CHEMISTRY.

Required in Departments 5 and 6, Year IV.

Selected chapters in chemical theory.

SANITARY AND FORENSIC CHEMISTRY.

Optional in Departments 5 and 6, Year IV.

The composition and examination of air, water and food; poisons and their detection.

SANITARY CHEMISTRY AND BACTERIOLOGY.

Optional in Department 1, Year IV.

The study of water supply and sewage disposal.

DRAWING.

DESCRIPTIVE GEOMETRY.

Required in Departments 1, 2, 3, 4, 6 and 7, Year I; 1 hour per week; both terms.

This course of lectures deals chiefly with the principles of orthographic and oblique projections and the application of such principles to the solution of problems relating to straight lines and planes.

Text books:—Elements of Descriptive Geometry—Church; Descriptive Geometry—Millar.

Reference:—Davidson.

DESCRIPTIVE GEOMETRY.

Required in Departments 1, 2, 3, 4, 6 and 7, Year II.

This course of lectures is a continuation of the work taken in the first year with the following additions: Problems relating to curved surfaces, principles of shades and shadows, and perspective.

DESCRIPTIVE GEOMETRY.

Required in Departments 1 and 2, Year III.

This course of lectures deals with spherical projections, the principles of map making, and the graphical solution of spherical triangles.

DESCRIPTIVE GEOMETRY.

Required in Department 4, Year III.

Advanced work in shades and shadows and perspective.

ELECTRICITY.

MAGNETISM AND ELECTRICITY.

Required in Departments 3, 5, 6 and 7, Year I; 2 hours per week; first term.

A course of lectures on general principles relating to magnetism, electricity, electromagnetism, electrostatics, etc., illustrated largely from engineering apparatus.

Text book:—Elementary Electricity and Magnetism — S. P. Thompson.

ELECTRIC CIRCUITS.

Required in Departments 3, 5, 6 and 7, Year I; 2 hours per week; second term.

This course of lectures concerns chiefly fundamental principles relating to electric circuits and leads to consideration of such problems as the distribution of electric energy through lines and networks and the division of load between generators.

Text Book:—Electrical Problems—Hooper and Wells.

ELECTRICITY.

Required in Departments 3, 5, 6 and 7, Year II.

Deals with the theory of electrical measurements, and detailed study of various methods applicable under different conditions in engineering practice to the measurement of resistance, current, potential difference, power and energy; calibration of commercial measuring instruments. The effect of choice of conditions of measurement on the accuracy of the result is considered.

Text book:—Electrical Measurements—Carhart and Patterson.

ELECTRICITY.

Required in Department 2, Year III; Department 1 and 4, Year IV.

A course designed to fit the requirements of non-electrical students. A study of essential principles is followed by discussion of electrical apparatus, plants, power transmission, railways, etc.

Text book:—Elementary Electricity and Magnetism—Jackson.

MAGNETISM AND ELECTRICITY.

Required in Departments 3, 6 and 7, Year III.

A course of lectures on theory of magnetism and magnetic circuits, theory of continuous current generators, motors, etc.

Text book:—Elements of Electrical Engineering—Franklin and Esty.

ALTERNATING CURRENT.

Required in Department 7, Year III; Department 3, Year IV; 2 hours per week; second term.

A first course of lectures on the subject, covering principles of measurement and leading to the analytical and graphical treatment of the simpler problems relative to alternating current circuits and machinery.

Text book:—Alternating Currents—Franklin and Williamson.

APPLIED ELECTRICITY.

Required in Department 7, Year IV.

This course deals by analytical and vector methods with the theory of alternating current circuits and machinery. Applications of theory are considered with regard to transformers, single and polyphase generators, synchronous motors and rotary converters, induction and commutating series motors, transmission lines (taking account of distributed capacity and leakage) wave analysis, etc.

Text:—Alternating Currents—Franklin and Williamson.

ELECTRICAL DESIGN.

Required in Department 7, Year III.

A course of lectures dealing with design of electric machinery and plants, accompanied by designs to be worked out in the drafting rooms.

References:—Dynamo Electric Machinery—S. P. Thompson; Electric Machine Design—Parshall and Hobart.

GEOLOGY.

DYNAMIC AND STRUCTURAL GEOLOGY.

Required by Departments 2 and 5, Year III; Department 1, Year IV.

Reference books, as in Historical Geology.

ECONOMIC GEOLOGY.

Required by Departments 2 and 5, Year III; Department 1, Year IV.

A study of the more important economic rocks, minerals and ores with their geological associations. Special attention paid to Canadian deposits.

HISTORICAL GEOLOGY.

Required by Departments 2 and 5, Year II; Department 1, Year III.

This course deals chiefly with historical geology with special reference to Canadian formations.

Reference books:—Introduction to Geology—Scott; Text Book of Geology—Dana.

ORE DEPOSITS.

Required by Department 2, Year III.

Discussion of the origin and classification of ore deposits in a general way, the mode of occurrence of the chief metals, and statistics of production, special attention being given to the metals mined in Canada.

ADVANCED GEOLOGY.

Required in Department 2, Year IV.

(A) Pre-Cambrian Geology.—An account of the Keewatin, Huronian and Laurentian rocks of Canada, with their distribution, structural relations and economic features, and briefer accounts of similar formations in the United States and elsewhere. Works of Reference, Reports of the United States and Canadian Geological Surveys, of the Bureau of Mines of Ontario, etc.

(B) Pleistocene Geology.—Lectures on the formation and distribution of the drift deposits of North America, with brief references to other regions. Glacial, Interglacial and Post Glacial beds are described, changes of climate are discussed with their probable causes, and the economic features of the clays, sands and gravels are pointed out. A weekly excursion is made during October and November to points of interest near Toronto, which is in the centre of the most important development of Pleistocene in America.

(C) **Physiography.**—A course of lectures on the surface forms of the earth, with the geological factors which have produced them. The broad features of the earth, its plains, tablelands, hills, valleys, mountains, oceans, rivers and lakes are discussed in a general way, methods of topographical surveys and mapping are referred to, and the chief physiographic areas of Canada are described.

MINING GEOLOGY.

Required in Department 2, Year IV.

A course of lectures on geological problems associated with mining, typical mining regions in Canada, the United States and elsewhere being discussed from the geological side. Works of reference, Mineral Industry and the books mentioned under (A).

PALAEONTOLOGY.

Required by Department 2, Year IV.

Introductory course of lectures and laboratory work.

Reference book:—Eastman's Zittel's Text-book of Palæontology.

MATHEMATICS.

ALGEBRA.

Required in Departments 1, 2, 3, 4, 5, 6 and 7, Year I; 2 hours per week; both terms.

Simple equations of one, two and three unknown quantities; quadratic equations of one and two unknown quantities; elementary treatment of variation, proportion and progressions; interest forms and annuities, permutations, combinations, binomial theorem.

Text book:—Intermediate Algebra—De Lury.

ANALYTICAL GEOMETRY.

Required in Departments 1, 2, 3, 4, 5, 6 and 7, Year I; 1 hour per week; both terms.

The course in Elementary Analytical Geometry covers the more familiar propositions in connection with the straight line, circle, parabola, ellipse and hyperbola. The subject is treated so as to illustrate the general methods of analytical geometry.

CALCULUS, DIFFERENTIAL AND INTEGRAL.

Required in Departments 1, 2, 3, 4, 6 and 7, Year II; Department 5, Year II, optional.

This is an elementary course in the infinitesimal calculus, but adequate to afford a knowledge of the character and methods of the subject and to enable students in chemistry, engineering, etc., to understand such of their text books as introduce the calculus.

LEAST SQUARES, METHOD OF.

Required in Department 1, Year III.

The course of lectures includes: The general principles of probability, the law of error, direct measurements of equal and different weights; mean square and probable errors; indirect measurements; conditioned observations; applications to empirical constants and formulæ, etc.

Text book:—Least Squares—Merriman.

TRIGONOMETRY, PLANE.

Required in Departments 1, 2, 3, 4, 5, 6 and 7, Year 1; 2 hours per week; both terms.

Trigonometrical ratios with their relations to one another, sines, etc., of the sum and difference of angles with deduced formulæ solutions of triangles, expressions for the area of triangles, radii of circumscribed, inscribed and escribed circles.

Text book:—Practical Trigonometry—Plane and Fawdry.

TRIGONOMETRY, SPHERICAL.

Required in Departments 1 and 2, Year II.

The course of lectures includes the derivation of formulæ and their application to the solution of triangles and to practical problems.

Text book:—Spherical Trigonometry—Todhunter and Leatham.

CEMENT AND CONCRETE.

Required in Department 4, Year IV; optional in Departments 1 and 3, Year IV.

Manufacture, testing and use of Portland cement; concrete and reinforced concrete; mathematical theory of reinforced concrete.

Reference books:—Reinforced Concrete—Buel and Hill; Principles of Reinforced Concrete Construction—Turneure and Maurer; Concrete, Plain and Reinforced—Taylor and Thompson.

MECHANICS.

CEMENTS AND CONCRETE.

Required in Department 1, Year III.

A short course of lectures on the testing of cements, the use of concrete plain and reinforced, and the theory of reinforced concrete.

DYNAMICS.

Required in Departments 1, 2, 3, 4, 6, and 7, Year I; 2 hours per week; both terms.

Kinematics and dynamics of rigid bodies, motion of translation, acceleration, graphics, the laws of motion, impulse and momentum, work and energy, power of pumps, etc.

Text book:—Tutorial Dynamics—Briggs and Bryan.

DYNAMICS OF ROTATION.

Required in Departments 1, 2, 3, 6 and 7, Year II.

Angular motion, velocity and acceleration, moment of inertia, simple harmonic motion, the pendulum, centres of mass, suspension and percussion, the phenomena of rotating bodies with special reference to such as fly wheels, governors, etc.

Text book:—Dynamics of Rotation—Worthington.

RETAINING WALLS, FOUNDATIONS AND DAMS.

Required in Department 1, Year IV.

This course of lectures is devoted to the design of the structures mentioned. Preparatory to the discussion of the practical aspects of the subject, and in order to gain familiarity with the fundamental principles involved, a large part of the first term is given over to the consideration of the theory of compound stress. The most approved forms of construction of retaining walls, footings, abutments, piers and dams are then described, and typical designs are worked out in the class and drafting rooms.

Text books and books of reference:—Retaining Walls for Earth,—M. A. Howe; Walls, Bins and Grain Elevators—M. S. Ketchum; A Practical Treatise on Foundations—W. M. Patton; A Treatise on Masonry Construction—I. O. Baker; Design and Construction of Dams—E. Wegmann.

HEAT ENGINES.

Required in Departments 3 and 6, Year III.

This course in heat engines is intended for students in Mechanical Engineering, to be supplementary to the general course of lectures in thermodynamics given in the third year.

The principal commercial forms of heat engines are dealt with in a more or less descriptive manner: special attention is given to considerations affecting the design of the ordinary forms of steam engines, gas engines and oil engines.

HYDRAULICS.

Required in Departments 1, 2, 3 and 7, Year III.

This is an introductory course of lectures in hydraulics and is devoted to the development and discussion of fundamental formulæ relating to the flow of water in pipes, the measurement of discharge by various methods, such as orifices and weirs, the conditions of flow obtaining in open channels, artificial and natural, and in pipes flowing partially full; together with other kindred subjects.

The object of this course is to provide the student with a good working knowledge of the fundamental principles of hydraulics; such as is useful in practical work, and is necessary to the intelligent investigation of more advanced problems, such as the design of turbines, water wheels and power plants generally.

Text book:—Treatise on Hydraulics—Merriman.

HYDRAULICS.

Optional in Year IV.

Following up the third year course in this subject the theory already acquired is applied to the solution of problems connected with branched pipes, water mains discharging at various points along their length, the effect of a dam on the water level at any point on a stream and numerous other problems.

The most important question considered and to which most of the lectures are devoted is the theory of turbines and centrifugal pumps, the effect of the design on the speed, discharge, power and efficiency being fully taken up.

Text books:—Hydraulic Motors, etc.—Bodmer; Centrifugal Pumps—Innes; Hydraulics—Merriman.

HYDROSTATICS.

Required in Departments 1, 2, 3, 4, 5, 6 and 7, Year II.

Laws of fluid pressure and application to machines, density of solids and fluids, theory of flotation.

MACHINE DESIGN.

Required in Departments 3 and 6, Year IV.

This course of lectures is a continuation of the course given in the third year, the problems in design being of a more advanced order.

Text book:—Elements of Machine Design—Unwin.

MACHINE DESIGN.

Required in Departments 3, 6 and 7, Year III.

This course of lectures is principally concerned with the application of the principles of kinematics and the theory of the strength and elasticity of materials to the design of machine parts, such as shafting, gearing, journals, clutches, etc.

In connection with these lectures, simple problems involving the design of machine parts are set for the student to work out in the drafting rooms, such drawings, with the necessary calculations, forming a part of the practical work in the subject.

Text book:—Elements of Machine Design—Unwin.

MECHANICS OF MACHINERY.

Required in Departments 3 and 7, Year III.

In this course the questions dealt with are the construction of acceleration diagrams, the determination of the accelerations of various parts of machines, the kinetic energy of machines, the effect of the weights and accelerations of parts on the velocity of the fly-wheel and the proper weight of the latter to fulfil given conditions. The theory of various forms of governors is also fully taken up and the efficiency of machines. The discussion of the design of slide valves and gears is continued in this course.

Text books:—Mechanics of Machinery—Kennedy; Slide Valve Gears—Halsey.

MILL BUILDING DESIGN.

Required in Department 3, Year IV.

The structural problems involved in the design of steel mill buildings are discussed in this course of lectures. Types of buildings, various styles of trusses, columns and details are described and the complete design of a steel mill building is worked out in the class and drafting rooms.

Text book:—Mill Building Design—Milo S. Ketchum.

OPTICS.

Required in Departments 1, 2, 3, 4, 5, 6 and 7, Year II.

The laws of reflection, refraction and transmission of light, photometry; theory of optical instruments; industrial photography and blue printing.

STATICS.

Required in Departments 1, 2, 3, 4, 6 and 7, Year I; 2 hours during the week; both terms.

This course of lectures deals with forces in a single plane, and concerns chiefly the calculation of tension, compression and shearing stresses in frame structures and solid beams. It also deals with the consideration of problems relating to friction.

STEAM ENGINES.

Required in Departments 3 and 7, Year II.

This course of lectures includes a discussion of the principles of action of the steam engine; also the theory and design of various simple forms of valve gears used in the operation of such engines.

STRENGTH OF MATERIALS.

Required in Departments 1, 2, 3, 4, 6 and 7, Year II.

Elasticity and strength of materials mathematically treated, including tension, compression and shear; the strength of pipes, boilers and riveted joints; stresses and deflections in beams and columns; tension and shear in shafts; suddenly applied loads; repeated stresses; resilience.

Text book:—Mechanics of Materials—Merriman.

STRENGTH AND ELASTICITY OF MATERIALS.

Optional in Year IV.

Most of the work taken up is in connection with structures in which the stresses are statically indeterminate.

Reference books:—Modern Framed Structures—Johnson; Roofs and Bridges, Part IV—Merriman and Jacoby.

STEEL AND IRON.

Optional in Year IV.

In this course of lectures are discussed the relations between composition of steels and irons and their physical properties. The effects of heat treatment on structure and the constitution and structure of iron and steel as revealed by the microscope are studied in class room and laboratory.

THEORY OF CONSTRUCTION.

Required in Department 1, Year III.

In the first term, the theory relating to the design of box and plate girders is covered fully, and the complete design of a plate girder span is worked out in the class and drafting rooms.

The second term is given chiefly to the design of a riveted truss highway span and a pin-connected truss railway span, the complete designs being made in the lectures and drafting rooms. Restrained, continuous and trussed beams complete the term's work.

THEORY OF CONSTRUCTION.

Required in Departments 2, 3 and 4, Year III.

The work is practically the same as that for Department 1 in the first term except that a runway girder is designed instead of a plate girder bridge span, and that restrained, continuous and trussed beams are discussed at the end of the term.

Text books:—Modern Framed Structures—Johnson, Bryan and Turneaure; Roofs and Bridges, Part III, Bridge Design—Merriman and Jacoby; Pocket Companion—Cambria Steel or Carnegie.

THEORY OF MECHANISM.

Required in Departments 3 and 7, Year II.

This course of lectures treats of the motions of machines, the latter being assumed to be of sufficient strength to resist acting forces. The formation of machines is dealt with in a general way and investigations of the velocities of points and links are made. The design of gear teeth and the application of trains of gears are taken up, also problems in static equilibrium.

Text books:—Mechanics of Machinery—Kennedy; Elements of Mechanism—Goodeve.

THERMODYNAMICS.

Required of Departments 3, 6 and 7, Year III; Departments 1 and 2, Year IV.

In this course of lectures the subject is treated in such a way as to make it of practical value and give a working acquaintance with the principles on which it is based. After the elementary ideas have been given and the proofs of the properties of Carnot's cycle, applications of the subject are made to the perfect gas and to saturated steam and to the various types of engines. Temperatures are taken from the air thermometer.

THERMODYNAMICS.

Optional in Year IV.

This is a continuation of the introductory course, the subject being here treated from a general standpoint, and the ideas of entropy and of the absolute scale of temperatures being introduced. The course includes the treatment of saturated and superheated vapours, gases, the flow of fluids, chimney and boiler efficiency and the theory of various engines and other appliances including air compressors, refrigerating machines, injectors and the various forms of link motions and radial valve gears.

Text books:—Thermodynamics—Peabody; Steam Tables—Peabody.

MINERALOGY.

CRYSTALLOGRAPHY.

Required in Departments 2 and 5, Year III.

A course devoted to lectures and practical work on the geometrical and optical properties of crystals, preparing the student for the study of rocks in thin sections and for the examination of crystallized substances, natural and artificial, under the polarizing microscope.

ELEMENTARY MINERALOGY.

Required in Department 5, Year I, and in Departments 1, 2 and 6, Year II. 2 hours per week first term.

After introducing the student to the chief chemical, physical and crystallographic characteristics of minerals, the course becomes descriptive and deals with about one hundred of the minerals most important from the industrial or scientific point of view.

Text books:—Minerals and how to study them—Dana; Text Book of Mineralogy—Dana.

ELEMENTARY PETROGRAPHY.

Required in Department 2, Year III.

A course of lectures and laboratory work introducing the student to the macroscopic study of rocks.

Text book:—Handbook of Rocks—Kemp.

GENERAL PETROGRAPHY.

Required by Department 2, Year IV.

Study of the chief rock-forming minerals and of some phases of petrography not covered in the course of the previous year.

MINING AND METALLURGY.

METALLURGY OF IRON AND STEEL.

Required in Departments 1, 2, 3, 5, 6, and 7, Year III.

The physical properties of iron and steel and the circumstances that influence the strength, etc., of iron. The different modes of manufacture of iron and steel and the effect of different processes of making on the resulting products. Explanations of specifications for iron and steel adopted by engineers.

METALLURGY OF GOLD, SILVER, COPPER, LEAD, ZINC, NICKEL.

Required in Departments 2, 5 and 6, Year IV.

The important metals other than iron are taken up in this course of lectures. The theory and practice of the art of metallurgy by which these metals are produced from their ores is explained and illustrated.

MINING AND ORE DRESSING.

Required in Department 2, Year III; advanced course, Department 2, Year IV.

The practice of crushing and pulverizing in different ways is explained and illustrated. The theory and practice of wet concentration of coarse and fine products, also dry concentration, magnetic, by oil, etc. The different methods of mining. Most of the time is spent on the theory and evolution of the art of ore dressing.

Text book:—Manual of Mining—Ihlseng.

MODERN LANGUAGES.**ENGLISH.**

Required in all Departments, Year I; 1 hour per week; both terms.

Composition and expression.

FRENCH.

Required in Department 4, optional in Departments 1, 2, 3 and 7, Years I and II; one hour per week; both terms.

An elementary course intended to train the student in the translation of scientific journals and treatises.

GERMAN.

Required in Departments 5 and 6, optional in Departments 1, 2, 3 and 7, Years I and II; one hour per week; both terms.

An elementary course intended to train the student in the translation of scientific journals and treatises.

Either French or German must be taken.

PHYSICS.**ACOUSTICS.**

Required in Department 4, Year III.

The general principles of acoustics, reflection, transmission and absorption of sound. The application to building acoustics.

HEAT.

Required in Departments 1, 2, 4, 5 and 6, Year III.

Thermometry and calorimetry, gas laws, latent and specific heat, expansion, mechanical equivalent, pyrometry. Course introductory to thermodynamics.

OPTICS.

Required in Departments 1, 2, 3, 4, 5, 6 and 7, Year II.

The laws of reflection, refraction and transmission of light, photometry; theory of optical instruments; industrial photography and blue printing.

RAILWAY ENGINEERING.

Required in Department 1, Year IV.

The object of this course is to make the student acquainted with the general principles of railroad and street railway engineering and the subject will be studied from the standpoint of—economic theory of location; train resistance; effect of grade, distance and curvature and rise and fall; maintenance of way; yards and terminals; tunnels, and street railway practice.

SURVEYING.

SURVEYING.

Required in Departments 1, 2 and 4, Year 1; 1 hour per week; both terms.

The lecture course includes—the general principles; surveying with the chain, the compass and chain and the transit and chain; the applications of trigonometry to inaccessible heights and distances; mensuration of surfaces and solids, co-ordinate surveying, division of land, etc.

Text books:—Land Surveying—Gillespie; Theory and Practice of Surveying—Johnson.

SURVEYING.

Required in Departments 1, 2, and 4, Year II.

This course of lectures takes up in detail, simple, reverse and compound curves as applied to railroad surveying. It also includes stadia, plane table and photographic surveying as applied to topographic work and also the main features of mine and hydrographic surveying.

Text books:—Henck, Shunk, Searles (Field books for Engineers); Theory and practice of surveying—Johnson; Plane surveying—Raymond.

SURVEYING AND LEVELLING.

Required in Departments 1 and 2, Year III.

This course of lectures takes up the work of the railroad engineer on construction, including profiles, cross sectioning, computation of volume of earth work, overhaul, transition curves, laying out turnouts, frogs and switches, etc.

Also a discussion of trigonometric and barometric levelling.

Text books:—Field Engineering—Searles; Railroad Curves and Earthwork—Allen.

OUTLINE OF LABORATORY COURSES.

ASSAYING.

ASSAYING.

Required in Department 2, Year III.

Assaying of various ores for gold, silver and lead.

ARCHITECTURE.

ARCHITECTURE.

Work on freehand drawing, pen and ink drawing, architectural sketching in black and white, and in color, architectural design.

ASTRONOMY AND GEODESY.

FIELD WORK.

Required in Department 1, Year III.

The practical work in this subject comprises observations in the field with the transit and sextant for the determination of time, latitude and azimuth by the methods described in the lectures.

ASTRONOMY, GEODESY AND METROLOGY.

Optional in Year IV.

The practical work in the above subjects includes the observation of meridian transits for time and longitude determinations, and of prime vertical transits for latitude, with the astronomical transit instrument; the observation of meridian zenith distances of stars, and of azimuths at elongation for latitude, with the alt-azimuth; theodolite observations for azimuth; observations for latitude with the zenith telescope; the investigation of the constants of the instruments used, and the reduction of all observations; the measurement of a base line with the steel tape, and the determination of the constants of the tape; the measurement of the angles of a triangulation and the adjustment of the angles of a network of triangles, etc.

BIOLOGY.

ELEMENTARY BIOLOGY.

Required in Department 5, Year II.

An elementary course of laboratory work on the general structure and identification of plants and animals, and the use of the microscope in the examination of tissues and products.

CHEMISTRY.

CHEMISTRY.

Required in Department 5, Year I; about 17 hours per week; both terms.

Quantitative experiments illustrating the use of the sensitive balance and confirming the fundamental laws of chemistry; qualitative inorganic analysis; quantitative analysis of pure salts; inorganic preparations.

Text book:—A Manual of Chemical Analysis, Qualitative and Quantitative—Newth.

CHEMISTRY.

Required in Departments 2 and 6, Year I; 3 hours per week; first term.

An elementary course of experiments to illustrate the use of the sensitive balance, to verify some of the laws which form the basis of the science and to serve as an introduction to quantitative laboratory methods. Instruction given as required before each period.

CHEMISTRY.

Required in Departments 1, 2, 3, 4 and 7, Year II.

Practice in elementary qualitative and quantitative analysis.

Text book:—A Smaller Chemical Analysis—Newth.

CHEMISTRY.

Required in Department 2, Year II.

Gravimetric determination of metals and acid radicals.

Text book:—A Manual of Chemical Analysis, Qualitative and Quantitative—Newth.

CHEMISTRY.

Required in Department 5, Year II.

The course comprises gravimetric and volumetric estimation of metals, acidimetry and alkalimetry and the preparation of inorganic and organic substances.

Text books:—A Manual of Chemical Analysis, Qualitative and Quantitative—Newth; Practical Methods of Organic Chemistry—Gattermann.

CHEMISTRY.

Required in Department 6, Year II.

In this course qualitative chemical analysis is well covered, also a certain amount of gravimetric analysis applied to the metals and acid radicals.

Text book:—A Manual of Chemical Analysis, Qualitative and Quantitative—Newth.

CHEMISTRY.

Required in Department 2, Year III.

This course includes acidimetry and alkalimetry and the technical analysis of ores and furnace products.

Text book:—A Manual of Chemical Analysis, Qualitative and Quantitative—Newth.

CHEMISTRY.

Required in Department 5, Year III.

Technical analysis of iron and steel alloys, ores, furnace products, ceramic materials, foods, gases, fuels, etc.; organic preparations.

CHEMISTRY.

Required in Department 6, Year III.

Technical analytical methods, acidimetry, etc.

CHEMISTRY.

Required in Departments 5 and 6, Year IV.

Advanced laboratory work in option selected.

SANITARY CHEMISTRY AND BACTERIOLOGY.

Optional in Department 1, Year IV.

The examination of water, chemically and bacteriologically.

ELECTROCHEMISTRY.

Required in Departments 5, 6 and 7, Year III.

Quantitative measurements to accompany the elementary electrochemistry lectures.

DRAWING.**DRAWING.**

Required in Departments 1 and 2, Year I; about 16 hours per week.

Copying from the flat, lettering, topography; graphical solution of problems in statics; problems in descriptive geometry, relating to both orthographic and oblique projections; the plotting of original surveys; measured drawings.

DRAWING.

Required in Department 4, Year I; about 15 hours per week.

Copying from the flat, lettering topography, freehand drawing in black and white, both from copies and models; the graphical solution of problems in statics; problems in descriptive geometry, relating to both orthographic and oblique projections; measured drawings.

DRAWING.

Required in Department 5, Year I; about 9 hours per week.

Copying from the flat, lettering, measured drawings.

DRAWING.

Required in Departments 3, 6 and 7, Year I; about 20 hours per week.

Copying from the flat, lettering, topography; graphical solution of problems in statics; problems in descriptive geometry, relating to both orthographic and oblique projections; measured drawings.

DRAWING.

Required in Departments 1 and 2, Year II.

Coloring and shading as applied to both topographical and construction drawings; problems in descriptive geometry relating to solids bounded by curved surfaces; principles of shades, shadows, and perspective; solution of problems in optics and strength of materials; measured drawings; elementary design.

DRAWING.

Required in Departments 3 and 7, Year II.

Coloring and shading as applied to construction drawings; problems in descriptive geometry relating to solids bounded by curved surfaces; principles of shades, shadows, and perspective; solution of problems in optics, theory of mechanism and strength of materials; measured drawings; elementary design.

DRAWING.

Required in Department 4, Year II.

Coloring and shading as applied to construction drawings. Freehand drawing, including water colors and monochrome; exercises from the orders of architecture; problems in descriptive geometry, relating to solids bounded by curved surfaces; principles of shades, shadows and perspective; solution of problems in optics and strength of materials; measured drawings; elementary design.

DRAWING.

Required in Department 6, Year II.

Same as Department 3, with exception that Department 6 does not include theory of mechanism.

DRAWING.

Required in Department 1, Year III.

Principles of map making, spherical projection, plotting of original surveys relating to topographical and railway work; problems in thermodynamics and theory of construction; original design of various structures; measured drawings.

DRAWING.

Required in Department 2, Year III.

Principles of map making, spherical projection, plotting of original surveys, relating to topographical and railway work and mining; problems in thermodynamics and theory of construction; original design; measured drawings.

DRAWING.

Required in Department 3, Year III.

Problems in thermodynamics, mechanics of machinery and theory of construction; original design of framed structures and machines; measured drawings.

DRAWING.

Required in Department 4, Year III.

Problems in descriptive geometry, shades, shadows and perspective; problems in theory of construction; advanced work in water colors and monochrome; original design including framed structures; measured drawings.

DRAWING.

Required in Department 6, Year III.

Problems in thermodynamics and theory of construction; original design of framed structures and machines.

DRAWING.

Required in Department 7, Year III.

Problems in thermodynamics and mechanics of machinery; original design of electrical and other machines; measured drawings.

ELECTRICITY.**ELECTRICITY.**

Required in Departments 3, 5, 6 and 7, Year I; 3 hours alternate weeks; both terms.

A course of experiments, given in logical order designed to demonstrate fundamental principles in connection with the generation and flow of currents in electrical circuits. The work is associated with the lecture courses, magnetism and electricity, and electric circuits.

ELECTRICITY.

Required in Departments 3, 5, 6 and 7, Year II.

This laboratory course is closely associated with the lecture course on electricity for the second year. The more important and useful methods of testing generators and circuits for electromotive force, resistance, current, grounds, etc., are practised, often under conditions such as occur in

practice. The work also includes methods of calibration of measuring instruments for voltage, current, power and energy meters, and certain studies of properties of incandescent lamps.

ELECTRICITY.

Required in Departments 3, 6 and 7, Year III.

This laboratory course is intended to afford the student an opportunity to become familiar with principles involved in continuous current shunt, series and compound wound generators and motors, and, to some extent, alternating current circuits and machinery. Other sections of the work deal with illuminating engineering, the magnetic properties of iron and steel, and study of iron losses in transformers and generators.

The course is arranged to stand in close relation to the lecture courses, magnetism and electricity, and electrical design for Year III, and to certain drafting room work.

APPLIED ELECTRICITY.

Required in Department 7, Year IV.

This laboratory course involves a thorough study of principles and properties of single and polyphase circuits and apparatus. Both vector and analytical methods are applied to the solution of problems based on tests made on laboratory machines.

The work deals mainly with constant voltage and constant current transformers, single and polyphase alternators, synchronous motors, rotary converters, induction and single phase commutating motors, transmission line, etc. The work does not consist only of factory tests, but is designed to lead the student to apply theory to practice as illustrated in apparatus under test, with a view to exact understanding of methods and an appreciation of limitations under many conditions. Free use is made of the oscillograph as a necessary device for "seeing" conditions under investigation. The best commercial measuring instruments are available to assist toward accurate work.

GEOLOGY.

PALAEONTOLOGY.

Required by Department 2, Year IV.

Introductory course of lectures and laboratory work.

Reference book:—Text Book of Palaeontology—Eastman—Zittel.

MECHANICS.

HYDRAULICS.

Required in Departments 1, 2, 3 and 7, Year III.

The work in this course is intended to illustrate the lecture course given in hydraulics and to give the student some working acquaintance with the formulas and coefficients met with in practice. Experiments are made on the coefficients of velocity and discharge for orifices of different shapes and sizes and for weirs. The coefficients obtained are used with orifices and weirs in measuring the discharge through meters, nozzles, etc., which are next under examination. Experiments on the friction of water in pipes and fire hose and in elbows and bends are also made, and the friction factors and coefficients of friction are determined.

HYDRAULICS.

Optional in Departments 1, 3 and 7, Year IV.

The time spent in the laboratory in the fourth year is devoted to experimental work on turbines of various types and centrifugal and turbine pumps and other similar devices. This experimental work is arranged to illustrate the lectures on turbine and pump design. The experiments are made on two large turbine pumps used in the laboratory supply, as well as on apparatus specially designed for instruction.

HYDROSTATICS.

Required in Departments 1, 2, 3, 4, 5, 6 and 7, Year II.

Experiments on determination of specific gravity of solids and fluids. Determination of pressure, etc.

STRENGTH AND ELASTICITY OF MATERIALS.

Required in Department 1, Year III.

This course is intended to give the student in Civil Engineering an introduction to the experimental study of the strength and elasticity of materials which is continued at much greater length during the fourth year. It is intended that he shall acquire some familiarity with the construction and operation of testing machines and with the properties of the ordinary building materials.

STRENGTH AND ELASTICITY OF MATERIALS.

Optional in Year IV.

This course of experiments is intended to give the student practice in investigating the elastic and physical properties of irons, steels, timber, concrete and other building materials.

Reference book:—Materials of Construction—Johnson.

THERMODYNAMICS (including Mechanical Laboratory).

Required in Departments 3 and 7, Year III.

This laboratory course is designed to assist in a clearer understanding of thermodynamics, machine design and mechanics of machinery. The work in thermodynamics consists in the setting of slide valves, indicating engines, measuring the brake horse power, simple engine and boiler tests and the testing of gas and gasoline engines under various conditions. The mechanical laboratory work deals with the efficiency of belts and ropes as well as of several machines of simple construction. An examination of lubricating oils is also made by means of oil testing machines and other well-known devices. Experiments are also made on the balancing of reciprocating and rotating masses.

THERMODYNAMICS.

Optional in Departments 3 and 7, Year IV.

The work in this year is a continuation and extension of the work covered in the third year laboratory course. Careful tests are made of engines of various types such as simple, tandem, and cross-compound steam engines; steam turbines; refrigerating machines; air engine; injectors and steam pumps, etc.; and an application is made of Hirn's Analysis and the entropy diagram to the results obtained. A complete set of experiments is made on each machine and the results plotted so as to show clearly to the student the effect of various alterations in the adjustment of the engine on the resulting efficiency.

Several modern gas and gasoline engines and a gas producer give ample opportunity for the study of this type of engine, and facilities are provided for sampling the gas supply and exhaust.

Two experimental stacks and three boilers enable results to be obtained on boiler efficiency and chimney draft.

MINERALOGY.**ELEMENTARY DETERMINATIVE MINERALOGY.**

Required in Department 5, Year I; and in Departments 1, 2 and 6, Year II; 1 hour per week; first term.

An opportunity is afforded the student to examine an elementary series of minerals. Test examinations on description of minerals, crystals and crystal models and on sight determination of minerals.

Text books:—Minerals and How to Study them—Dana; Text-book—Dana.

BLOW PIPE ANALYSIS AND DETERMINATIVE MINERALOGY.

Required in Department 2, Year II.

(a) Demonstrations in the use of the blow pipe for the determination of minerals. (b) Identification of minerals by means of physical properties.

Text books:—Determinative Mineralogy and Blow Pipe Analysis—Brush-Penfield; Mineral Tables—Eakle.

BLOW PIPE ANALYSIS AND DETERMINATIVE MINERALOGY.

Required in Department 5, Year I; 3 hours per week.

The student is introduced to the application of the blow pipe to the determination of minerals and is afforded an opportunity of becoming acquainted with the more important minerals.

Text book:—Determinative Mineralogy and Blow Pipe Analysis—Brush-Penfield.

DETERMINATIVE MINERALOGY.

Required in Department 1, Year II.

Examination and determination of common minerals and rocks by means of physical properties.

DETERMINATIVE MINERALOGY.

Required in Department 5, Year II; and Department 2, Year III.

The student is given exercises in the application of physical and blow pipe tests to the identification of minerals.

Text book:—Determinative Mineralogy and Blow Pipe Analysis—Brush-Penfield.

PRACTICAL PETROGRAPHY.

Required by Department 2, Year IV.

A brief course in the microscopic and macroscopic study of rocks—a continuation of the practical work of the previous year.

MINING AND METALLURGY.

The work consists in milling and concentrating ores of different kinds, also amalgamation of gold ores. From the nature of the work, as most of it requires continuous unbroken periods of time in order to operate satisfactorily, no time table can be adhered to, in certain weeks several whole days being devoted to a test.

Laboratory work which can be carried out in shorter periods is set down for a certain afternoon in the week.

The mechanical concentration is all done in the separate milling building and the metallurgical work in the assay and metallurgical laboratories. The total time devoted to this work throughout the year is about 150 hours.

In addition to this class of work each student is required to select a thesis which requires practical work; this might fall in the milling, metallurgical, chemical or mineralogical laboratories according to the choice and taste of the student.

PHYSICS.**ACOUSTICS.**

Required in Department 4, Year III.

Wave motion in general, laws of vibrating strings and organ pipes, velocity of sound, Melde's and Lissajous' experiments, testing absorption and reverberation.

HEAT.

Required in Departments 1, 2, 4, 5 and 6, Year III.

Calibration of thermometers, determination of latent and specific heat, verification of gas laws, coefficients of expansion, mechanical equivalent, etc.

OPTICS.

Required in Departments 1, 2, 3, 4, 5, 6 and 7, Year II.

Reflection and refraction, optical constants of lenses and mirrors, theory of optical instruments.

PHOTOGRAPHY.

Required in Departments 1, 2, 3, 4 and 7, Year III.

Making of negatives from the round and from the flat. Preparing negatives for printing. Printing for various purposes. Blue printing. Mounting.

RAILWAY ENGINEERING.**FIELD WORK.**

Optional in Year IV.

During the first term an original survey for a railroad some one or two miles in length will be made, the work to be conducted according to the most modern methods of loca-

tion. Upon the completion of this work, a contour map of the district surveyed will be plotted in the drafting room and a line adjusted to it. This will be staked out in the field, profiles taken and complete estimates of the cost of construction made.

SURVEYING.

FIELD WORK.

Required in Departments 1, 2, and 4, Year I; 12 hours per week; first term.

This course comprises—testing chains; practice in chaining; a complete survey of a piece of land with the chain; keeping of field notes; the use of the compass and transit in surveying closed figures and traverse lines and in ranging straight lines; plotting by latitudes and departures and otherwise; computing areas.

FIELD WORK.

Required in Departments 1 and 2, Year II.

(A) This course of instruction embraces all adjustments of the transit, accurate determination of angles of closed figure, minor problems in triangulation—ordinary and special problems as applied to railroad work in regard to curves, simple, reverse and compound, profile levelling and plotting of profile.

FIELD WORK.

Required in Department 4, Year II.

(B) This course includes adjustment of the levels, accurate differential levelling, profile levelling and plotting of same. Cross sectioning and computation of earthwork, adjustment of transit and its use in laying out curves, simple, reverse, etc.

FIELD WORK.

Required in Departments 1 and 2, Year III.

This includes adjustments of levels and accurate check differential levelling, determination of profile, cross sectioning and computation of earthwork of located line on ground and plotting of same. Also cross sectioning by use of hand level. Instruction in the use of the Lugeol and Rochon micrometers and location of points by means of the plane table. A complete stadia topographic survey is made and plotted. The spiralling of curves on track already laid down and practical methods of locating and placing sidings and switches.

OUTLINE OF VACATION WORK.

CONSTRUCTION NOTES.

Required in Years II and III.

The construction notes required consist of neat and complete dimensioned sketches in pencil of any structures, machines or plant which may be of interest. Any object chosen should be represented and dimensioned in such manner that it could be completely constructed from the notes as the only available information.

From students in Department 2, who have been actually engaged during the summer with Government or other approved geological survey parties, geological field notes will be accepted in lieu of construction notes.

PROFESSIONAL DEGREES.

The attention of graduates is directed to the following regulations respecting professional degrees.

The following degrees have been established: Civil Engineer (C.E.), Mining Engineer (M.E.), Mechanical Engineer (M.E.), Electrical Engineer (E.E.), Chemical Engineer (Chem.E.), subject to the following regulations:—

1. A candidate for one of the said degrees shall hold the diploma of the School of Practical Science or of the Faculty of Applied Science and Engineering and the degree of Bachelor of Applied Science except in the case provided for in clause 11 hereunder.
2. He shall have spent at least three years after receiving the degree of Bachelor of Applied Science in the actual practice of the branch of engineering wherein he is a candidate for a degree.
3. Intervals of non-employment or of employment in other branches of engineering shall not be included in the above three years. It shall not be necessary that the several periods requisite to make up the said three years be consecutive.
4. Satisfactory evidence shall be submitted to the University examiners as to the nature and length of the candidate's professional experience for the purpose of clauses 2 and 3.

The Examiners shall satisfy themselves by oral or written examinations in regard to the candidate's experience and competence.

5. The candidate shall prepare an original thesis on some engineering subject in the branch in which he wishes a degree; the said thesis to be accompanied by all necessary descriptions, details, drawings, bills of quantities, specifications and estimates.
The candidate may be required at the option of the Examiners to undergo an examination in the subject of this thesis.
6. Notice in writing shall be sent to the Secretary not later than the first day of February, informing him of the degree to which the candidate wishes to proceed and of the title of his proposed thesis for the approval of the Senate.
7. The evidence under clause 4, and the thesis, with accompanying papers, described in clause 5, shall be sent to the Secretary not later than the first day of April.
8. The candidate shall be required to present himself for examination in the month of April at such time as may be arranged by the Secretary.
- 9 The fee for any one of the said degrees shall be twenty dollars, and shall be paid to the Bursar not later than the first day of April.
10. The thesis, drawings, and other papers submitted under clause 7 shall become the property of the University.
11. Candidates who graduated from the School of Practical Science before June, 1895, shall not be required to hold the degree of Bachelor of Applied Science.

EXTRACTS FROM ACTS.

From the Ontario Act Respecting Land Surveyors and Survey of Lands (R.S.O.).

"26. Any person serving as an apprentice as hereinafter provided, may, with the permission of the Board of Examiners, attend the Ontario School of Practical Science, or any school, college or university, the course of study in which is, in the opinion of the Board, sufficiently similar to that in the Ontario School of Practical Science, for the purpose of taking any course of study which includes any subject required for the final examination for admission to practice as a land surveyor, but the total period of such apprenticeship and of such course of study shall not exceed the period of four years from the date of the articles of apprenticeship as above mentioned, and not less than three years of the said period of four years shall be passed in the actual service of a practising Ontario Land Surveyor.

* * * * *

"28. The privilege of a shortened term of apprenticeship shall also be accorded to any graduate of the Royal Military College at Kingston and of the Ontario School of Practical Science in civil engineering or in mining engineering, or of the McGill College, Montreal, in civil engineering or in mining engineering, and such person shall not be required to pass the preliminary examination hereinbefore required for admission to apprenticeship with a land surveyor, but shall only be required to serve under articles with a practising land surveyor duly filed as required by section 32 of this Act, during twelve successive months of actual practice, after which, on complying with all the other requirements, he may undergo the examination prescribed by this Act.

"29. Such person at any time during his apprenticeship may, with the permission of the Board of Examiners, attend the Ontario School of Practical Science, or any school, college or university, the course of study in which is, in the opinion of the Board, sufficiently similar to that in the Ontario School of Practical Science, for the purpose of taking any course of study which includes any subject required for the final examination for admission to practice as a land surveyor, but the total period of such apprenticeship, and of such course of study, shall not exceed the period of two years from the date of the articles of apprenticeship as above mentioned, and not less than twelve months of the said period of two years shall be passed in the actual service of a practising Ontario Land Surveyor."

From Act Respecting Manitoba Land Surveyors.

"28. (1) The privilege of a shortened term of apprenticeship shall be accorded to graduates of the Royal Military College of Canada and to graduates in civil engineering of the University of McGill College of Montreal, the School of Practical Science of Toronto, the School of Mining at Kingston, and graduates of Manitoba University who have taken first or second class honours in the special course in mathematics; and such graduates shall not be required to pass the preliminary examination hereinbefore prescribed for admission to apprenticeship with a land surveyor, but shall only be required to serve under articles with a practising land surveyor, duly filed as required by section 24 of this Act, during twelve successive months of actual practice, of which at least six months shall be actual practice in the field, after which, on complying with the other requirements of this Act, he may undergo the examination for commission to practice prescribed by this Act."

From British Columbia Land Surveyors' Act, 1905.

"52. Whosoever shall have followed, during at least two years, a regular course of studies in all the branches of the sciences required by law in order to be received as a land surveyor; who has attended

the lectures of a British university or college where a complete course of theoretical and practical instruction is given in civil engineering, physics, and all other branches of sciences required by law in order to be admitted as a land surveyor, and who has received from such university or college, after a regular examination, his diploma or degree as a civil engineer or land surveyor, on satisfying the Board that he is duly qualified as aforesaid, may, without undergoing the examination for admission to the study of land surveying, be received as a student by any member of the Corporation practising in this Province, and shall be bound to perform only twelve months' actual service in the field as such; or, if he has obtained his degree or diploma as a civil engineer or land surveyor in less than two full years, then only such time of service which, added to the time he has devoted to his course of studies, shall complete the period of three full years; and, at the expiration of the said active service, such person, on complying with the other provisions of this section, shall have the right to present himself and undergo the examination required by law, and, if qualified, to be admitted to practise as a land surveyor for the Province as if he had served his three full years under his indentures with a practising land surveyor; but instead of paying fifty dollars he shall be obliged to pay sixty dollars as fees for his examination and commission as land surveyor."

The above section is to be taken collectively as a whole, no separate clause or sentence can be applied to any particular case.

From the Dominion Lands Act.

"Every graduate in surveying of the Royal Military College of Canada, and every person who has followed a regular course of study in all branches of education required by this Act for admission as a Dominion Land Surveyor, through the regular sessions, for at least two years in any college or university where a complete course of theoretical and practical instruction in surveying is organized, and who has thereupon received from such college or university a diploma as civil engineer, shall be exempt from serving three years as aforesaid, and shall be entitled to examination after one year's service under articles with a Dominion land surveyor, at least six months of which service has been in the field, on producing the affidavit required by the next preceding clause as to such service; but it shall rest with the Board to decide whether the course of instruction in such college or university is that required by this clause."

The attention of the candidates for the Diploma of D.T.S. given by the Dominion Board of Examiners, is directed to the facilities afforded for preparation in the University.

From the Ontario Architects' Act.

"Any student who has matriculated in Arts in any University in His Majesty's dominions, or in the Ontario School of Practical Science, shall not be required to pass the preliminary examinations.

"23. Any person who applies for admission to registration as an architect after the coming into force of this Act, shall be not less than twenty-one years of age, shall have served as a student not less than five years with a principal or principals entitled to register under this Act, or with any other principal or principals approved by the Council, and have passed such qualifying examinations as may be required by this Act.

"24. (3) Any person who has graduated from the Ontario School of Practical Science shall be required to serve only three years as a student, one of which three years may be served during the vacation of such school.

"(4) Upon and after the passing of this Act, students shall serve such term as is required to be served by the provisions of this Act, under indenture to be a registered architect, which indenture and any assignment thereof with affidavit of execution thereto attached shall be filed with the Registrar upon payment of such fees as the Council may by regulation direct.

LABORATORY EQUIPMENTS.

THERMODYNAMIC AND MECHANICAL LABORATORY.

The University has just completed the erection of a large, well-equipped building for the accommodation of the steam, gas, mechanical and hydraulic laboratories, these laboratories being used for the first time during the present session. A more complete description of the laboratories has been published elsewhere so that the present description is only intended to give the main features.

The part of the building set apart for thermodynamics and other mechanical work is the ground floor of a room 60 ft. x 155 ft. This room is lighted entirely from the roof in a very perfect way. A part of the space 40 ft. wide running the entire length of 155 feet is served by a 3-ton travelling crane and contains the following equipment:

50 h.p. Brown engine with separate jackets on both heads and barrel of cylinder.

Two-stage Rand air compressor having compound steam cylinders, each fitted with Meyer cut-off gear. The low pressure air cylinder has Corliss inlet gear.

30 h.p. high-speed Leonard tandem compound engine with shaft governor.

15 h.p. high speed McEwen engine.

75 h.p. two line compound Willans engine.

15 h.p. DeLaval turbine with special nozzles for condensing and non-condensing tests.

Two 15 h.p. Leonard engines with different types of valves, and which are used for valve setting. There are also two surface condensers with air pumps so arranged that any engine in the laboratory may be made to exhaust into the atmosphere through an open heater or into one of the condensers, the change from one arrangement to the other being accomplished in a few minutes without the aid of valves.

The laboratory further contains a—

3-ton York refrigerating machine with tanks.

Westinghouse air brake apparatus.

Apparatus for testing injectors and steam pumps.

Numerous other pieces of apparatus and instruments.

The work on internal combustion engines and producers is performed on the following:—

18 h.p. Canada suction gas producer.

14 h.p. producer gas engine arranged for various compressions and points of ignition.

10 h.p. Fielding and Platt engine for city gas or coal oil, having various adjustments.

8 h.p. Otto gas engine.

6 h.p. marine gasoline engine.

Ericsson air engine.

Various accessories to above machines.

Steam for the laboratory is supplied by two 50 h.p. and one 100 h.p. Babcock and Wilcox boilers, the latter having an internal superheater. These boilers are located in a separate boiler room. These boilers are used for experimental work only and are fitted up for testing. The gases pass up through two independent chimneys and these have been arranged with ladders and holes so that the draft and other conditions in the chimney at any point of its height may be examined.

In smaller work rooms off the main laboratory are placed belt and oil testing machines, apparatus for testing the efficiency of gears and machines and for experiments in the balancing of machinery.

HYDRAULIC LABORATORY.

The Hydraulic Laboratory occupies two floors each 40 feet x 112 feet, which are well lighted by large windows on the side and end.

The water for the experimental work is pumped through the various pieces of apparatus from a well by means of two turbine pumping units both of which are driven by a Belliss and Morcom compound engine of 125 h.p. and running at a speed of 525 revs. per minute. Both engine and pumps have been installed with a view to using them in experimental work as well as for supply of water for the other apparatus used in the laboratory.

The pumping units are capable of delivering one cubic foot of water per second against heads of 250 feet and 300 feet respectively. These units are designed and connected up so that they may be run in series giving the above discharge at 550 feet head or they may be run in parallel giving double the discharge at a lower head. Each pumping unit consists of two two-stage pumps mounted on a common base and driven by a single pulley and the construction and piping are such that each two-stage pump may be driven separately or that all may be driven discharging separately one cubic foot per second at about 125 feet head through each of four independent pipes, or else the pumps may be run in series or in parallel. The scheme is thus well adapted to laboratory work and under the heads used on reaction turbines over six cubic feet per second may be obtained.

The laboratory further contains a large vertical steel tank $5\frac{1}{2}$ feet diameter by 34 feet high with arrangements for the attachment of nozzles and other mouth pieces, etc. Connections are also arranged for reaction turbines, the tank acting as a reservoir.

The discharge from the turbines or nozzles is measured in a weir tank nearly 6 feet wide and 21 feet long containing a contracted weir $4\frac{1}{2}$ feet wide. This weir may be calibrated by two weighing tanks each having a capacity of about 240 cubic feet.

There are two reaction turbines and two impulse wheels all ready for experiment, the power being measured by brakes and the water by weir or orifices.

Smaller orifice and weir tanks each about 3 feet by 3 feet by 12 feet with necessary measuring tanks are arranged for instruction in coefficients of various kinds and practice with weirs and orifices.

A Venturi meter and other meters, also hydraulic rams and similar devices are available for testing, and good facilities have been arranged for testing friction and other qualities of pipes and fire hose.

For special investigations on turbine and centrifugal pumps, other pumps in addition to those already described have been arranged.

The basement of the laboratory contains an open trough 5 feet wide about 110 feet long with a large weir at one end. It is intended to use this trough for experiments on the flow in open channels, for measurements of large discharges by means of the weir, and for experiments with current meters and Pitot tubes.

Numerous pieces of smaller apparatus together with all instruments required have also been provided, and the laboratory equipment is believed to be very complete.

DONATIONS TO THE THERMODYNAMIC AND HYDRAULIC LABORATORIES.

The following donations to the equipment of the laboratories have been made through the kindness of those mentioned.

50 H.P. Wheeler Surface Condenser, presented by Mr. F. M. Wheeler, New York.

Blake Feed Pump, presented by the manufacturers.

6 inch New American Turbine, presented by Wm. Kennedy & Sons, Owen Sound, Ont.

Two Crown Water Meters, presented by the National Meter Co., New York, through Mr. M. Warnock, Toronto.

Rock Drill presented by Sullivan Machinery Co., New York, through Mr. A. E. Blackwood, '95.

Marine Gasoline Engine, presented by Canadian Fairbanks Co., Montreal.

Two engines with different types of valve, presented by Messrs. E. Leonard & Sons, London, Ont.

In addition to the above, other firms have materially assisted by offering apparatus at cost price, among whom may be specially mentioned, The Canadian Rand Drill Co., Sherbrooke, Quebec.

PHYSICAL LABORATORIES.

The optical laboratory is equipped with Weinhold optical benches and accessories for determining the constants of mirrors and lenses and for demonstrating the construction and use of telescopes, mirrors, field glasses, microscopes, etc. There is also a full equipment of optical instruments including telescopes, microscopes, field glasses, comparators, spectrometers, saccharimeters, level tester, photometer, focometer, dynameter, cathetometer, polariscope, projecting lanterns, etc.

The photographic laboratory is supplied with several cameras for viewing, copying, enlargement and reduction, a spectroscopic camera and an electric blue printing machine and the necessary dark rooms.

The Hydrostatic laboratory contains a supply of various forms of hydrometers, hydrostatic balancers, Jolly balance, Mohr's balance, hydrostatic press, vacuum pumps, gauges, etc.

The Heat laboratory is equipped with a full supply of calorimeters and accessories for determinations of latent and specific heat. There is also a steam boiler, and jacketed tubes for determinations of the expansion of metal rods, air thermometer, apparatus for verification of Boyle's law and pressure and boiling point curve and for determination of the absolute expansion of mercury, Nichol's modification of Rowland's calorimeter for determination of Mechanical Equivalent of Heat, the work being supplied by an electric motor.

The Acoustical laboratory is provided with sonometer, siren, forks ordinary and electric, Lissajous' and Melde's apparatus, organ pipes of various forms, manometric flame apparatus and a special equipment for work in architectural acoustics consisting of torsion chronograph, electro-pneumatic wind chest and standardized organ pipes and other accessories.

STRENGTH OF MATERIALS LABORATORY.

This laboratory is intended for the scientific and commercial testing of the materials of construction such as iron, steel, timber, concrete and masonry.

It is supplied with the following:—

An Emery 50-ton hydraulic machine, built by Wm. Sellers & Co., of Philadelphia, for making tests in tension and compression.

A 100-ton screw power machine, built by Riehle Bros., Philadelphia. It is designed for making tests in tension, compression, shearing and cross-breaking and will take in posts 12 feet long and beams up to 18 feet in length.

A Riehle 10-ton screw power universal testing machine.

A Riehle 50-ton screw power universal testing machine.

A 15-ton single-lever machine, built by J. Buckton & Co., Leeds, England.

A torsion machine, built by Tinius Olsen & Co., Philadelphia, for testing the strength and elasticity of shafting. This machine will twist shafts up to 16 feet in length and 2 inch in diameter.

A Riehle transverse testing machine of 5,000 pounds capacity, adapted to specimens up to 48 inch in length.

A Riehle compressometer, with spherical seat attachment for the adjustment of specimens having slightly non-parallel faces. This compressometer will receive specimens up to 10 inch in length.

A 20,000 pound Olsen, hand power, wire testing machine, especially fitted for testing wooden columns with both fixed and pivoted ends.

A Riehle abrasion cylinder, built to the standard required by the National Brick Makers' Association, adopted in 1901.

A large number of extensometers of the usual degree of precision. These include the Bauschinger, Unwin, Marshall, Riehle, Johnson, Henning (recording) and other types. In addition there are the usual scales, micrometers, telescopes and reflectors, coltmeters for the determination of metallic contact, and such other appliances as are necessary in the making of precise measurements.

The shop is equipped with a number of high-class machine tools specially fitted for reducing the specimens to the requisite shapes and dimensions with a minimum of hand labour. It is also supplied with the necessary appliances for making ordinary repairs and for making apparatus for special experiment and original investigation.

CEMENT TESTING LABORATORY.

This laboratory is fitted with all the ordinary moulds, sieves, balances, burettes, steaming and drying tanks, tables and other appliances necessary in making the usual physical tests of a Portland cement. In addition there are also the following:—

A Riehle 2,000 lb. machine, fitted for either tension or compression.

A 2,000 lb. Fairbank's shot machine for tension.

A 1,000 lb. Olsen automatic shot machine fitted for tests in either tension or cross-breaking.

An extra large Faija's hot bath apparatus.

METROLOGICAL LABORATORY.

The department of surveying and geodesy is provided with all the ordinary field instruments, such as transits, levels, compasses, micrometers, sextants, planimeters, plane tables, tapes, chains, etc., with which it is carried on the instruction in practical field operations as detailed elsewhere.

A small laboratory is also established containing the necessary instruments for the refined measurements of geodetic surveying; as, a standard yard and metre, a Rogers 10 foot comparator, a Kater's pendulum with vacuum chamber, a level trier, micrometer, microscopes, etc.

There is also a geodetic observatory in connection with this department in which students of the fourth year are instructed in, taking observations for time, latitude, longitude, and azimuth by the precise methods used in connection with a geodetic survey. It contains a 10 inch theodolite and a zenith telescope by Troughton & Simms; an astronomical transit instrument and an 8 inch theodolite by Cooke; an electro-chronograph; a Howard astronomical clock; a Dent sidereal break-circuit chronometer; arithmometers, etc.

ELECTRICAL LABORATORIES.

Galvanometer laboratory:—This laboratory is equipped with numerous galvanometers, resistance boxes, bridges, potentiometers, standard resistances, standard cells, etc., and much other usual and special apparatus for varied electrical experiments of the more delicate variety.

Another room is fitted more especially for calibration of electrical instruments for alternating and direct currents. Some ninety portable measuring instruments are available for students' use, also standard instruments, including Weston laboratory standards, Kelvin balances, etc., with which the portable instruments may be compared.

Photometric Laboratory:—This laboratory contains apparatus for studying the various types of arc and incandescent lamps.

Direct Current Machine Laboratory:—This laboratory contains fourteen dynamos and motors varying in capacity from two to twelve kilowatts, adapted for experiments illustrating the properties of compound, shunt and series dynamos and motors, arc machines, etc. Switchboards, numerous rheostats, lamp racks, starting boxes, circuit breakers, flexible cables, brakes, torsion dynamometers, tachometers, etc., are available for use with the machines. The students are supplied with the best standard portable ammeters and voltmeters obtainable.

Alternating Current Machine Laboratory:—This laboratory contains two 15 kw., 25 cycle and two special 15 kw., 60 cycle General Electric polyphase revolving field alternators direct driven by Westinghouse and Edison motors, two rotary converters of 10 kw. and 5 kw. capacity. a $7\frac{1}{2}$ kw. General Electric polyphase induction motor with slip ring rotor, Westinghouse three phase squirrel cage induction motors, Wagner single phase motor, Westinghouse single phase series motor, Westinghouse alternator, and several three phase induction motors; also transformers, reactive coils, lamp racks, rheostats, circuit breakers, flexible cables, brakes and other details for experiments on the properties of alternating currents and alternating current apparatus in general. A constant-current transformer with full load of series arc lamps, three oscillographs for studying wave forms, a high potential trans-

former and a mercury arc rectifier may also be mentioned. The students are supplied with Weston, Westinghouse and Thomson portable instruments for measuring purposes.

CHEMICAL LABORATORIES.

The Chemical laboratories are situated in the western half of the Chemistry and Mining building, on the first and second floors. The rooms are large and well lighted, and are supplied with the usual modern equipment.

The first and second year laboratory for qualitative work has accommodation for 112 students, each working space being supplied with water, gas and fume cupboard. The laboratory for quantitative analysis will accommodate 48 students, and is supplied with commodious fume cupboards and all necessary apparatus. A laboratory with working places for 36 is provided for the students engaged in the study of technical chemistry; it is equipped with appliances for the preparation and testing of chemical products. Each of these laboratories has its own balance room adjoining, furnished with instruments from the best makers and adapted to the particular objects in view.

In addition there are rooms set apart for gas analysis, electrolytic analysis, calorimetry, and a specially constructed fireproof laboratory for combustion, crucible and bomb furnaces. Each of these laboratories is supplied with apparatus of the most approved design, providing excellent facilities for the prosecution of work in analytical and technical chemistry.

ELECTROCHEMICAL LABORATORIES.

The Electrochemical laboratories which are situated in the Chemistry and Mining building are provided with special facilities for electrolytic work, including a large storage battery and electroplating dynamo with tanks as well as a complete set of apparatus and electrical measuring instruments. The experimental work on electric furnaces is performed in two rooms specially equipped for this purpose with rheostats and switchboard connections to a 120 kw. D.C. generator, which supplies the current required.

GEOLOGICAL AND MINERALOGICAL LABORATORIES.

By the erection of a new Chemistry and Mineralogy building on College Street the University has secured for the first time really modern laboratory equipment for the departments of Geology and Mineralogy.

For students of science generally brief courses are given in laboratory work, especially in personal examination of type sets of rocks, fossils, minerals and crystal models. These laboratory exercises serve to illustrate the introductory didactic instruction.

For the encouragement of pure crystallography the laboratories are supplied with goniometers of the various types, crystal models, appliances for the cutting of oriental crystal sections and for the physical examination of the same. Practical Petrography is carried on in rooms provided with type sets of rocks, both macroscopic and microscopic. Advanced students are taught to make thin sections of rocks and fossils and to study them microscopically. Students in Palaeontology are given instruction in the preparation of material for study and are afforded an opportunity of examining type series of specimens.

The laboratory for the preparation of thin sections of rocks, minerals and fossils is provided with electric diamond saws and grinding appliances for the various types of work incidental to the preparation of thin sections and museum material.

A room is also provided for advanced work in Cartography and Geological Surveying.

The departments possess 28 petrological microscopes and five of other types so that it is now possible to provide advanced students with instruments and sets of thin sections for their own especial use. The blowpipe laboratory contains 156 lockers, especially designed for apparatus for students.

ASSAYING LABORATORIES.

Two assaying laboratories are situated in the basement of the Chemistry and Mining building, one has a floor space of 17 feet x 47 feet, and the other 28 feet x 37 feet, adjoining each is a room 15 feet x 11 feet, with the necessary equipment for the wet work in connection with assaying. Common to both laboratories is a balance room furnished with gold balances set on a concrete pier. Each of the laboratories contains a number of melting holes (13 in all) for crucible fusions, various gas furnaces both for crucibles and muffles, and a large brick muffle furnace.

The furniture comprises lockers for the students, tables for the pulp balances and the necessary cabinets and shelving.

Adjoining the assay laboratories is a preparation room (19 feet x 13 feet) which is equipped with a motor, crusher, pulverizer, sample grinder and all the necessary hand pulverizers, screens, etc., for preparing ores for assay.

The metallurgical room is 40 feet x 21 feet and is equipped at present with a reverberatory furnace for roasting sulphide and arsenical ores, fume cupboard, lockers, tables etc., and is intended for hydro-metallurgical work.

MILLING AND CONCENTRATING PLANT.

A detached building 72 feet x 70 feet in area, contains the milling and concentrating equipment. It is heated, lighted and supplied with power from the main building, and is divided into two parts. The greater part, with 72 feet x 53 feet floor space, and 22 feet high, contains the milling and concentrating equipment. The machinery for the former operations consists of a five-stamp battery erected on concrete foundation, Challenge ore feeder, amalgamating plates, Wilfley table for concentration, a clean up pan, steel settling tanks, a steel tank suspended from the roof girders to furnish a constant supply of water, and a track with travelling crawl to transport ore. This is driven by a 15 horse power motor.

The concentrating part consists of a set of five revolving trommels for wet screening, four three-compartment jigs, a trough classifier delivering three products, and two revolving buddles, Wilfley Slimer, Deister Slimer, Richard's Pulsating Classifier, Richard's Pulsating Jig, besides experimental apparatus of various kinds for experimenting on the falling rates of ore particles, the settling of slimes, surface tension action in grease and flotation methods, etc. The waste products run to the same settling tanks as the tailings from the stamp battery. The ore is handled by a travelling crawl. All the machinery in this part is driven by a 10 horse power motor.

The plant throughout is intended mainly for experimental purposes and is made of such a size that numerous experiments can be carried out on small quantities of ore. Tests can also be made on lots of one or two tons.

The other part of the milling building, with 72 feet x 17 feet floor space and 15 feet high, is divided into four separate rooms. The largest of the four rooms has an area of 476 square feet and is devoted to the crushing and pulverizing of the ores preparatory to their treatment in the milling and concentrating room. It is isolated in order to confine the dusty operations as far as possible to this one room, and is equipped with a gyrating crusher of Hadfield's make, a set of Hamilton rolls 16 inches by 12 inches, platform scales for weighing ore, a jib crane, pulleys, buckets, etc., for handling the rock. An adjoining room contains a 30 h.p. motor for driving the machinery of the crushing department, and storage bins for ore, work bench, etc. Another room with 17 feet x 15 feet floor space, is furnished with a magnetic separator of the Rowan-Wetherill make, driven by its own motor.

One room of the same size as the above remains available for future additions.

ORE DRESSING AND ASSAY LABORATORIES.

The Coniagas Mines Ltd., through the General Manager, Mr. R. W. Leonard, has supplied the Mill Building with a full-sized Wilfley Slimer free of cost.

The Deister Concentrator Co. of Fort Wayne, Indiana, have supplied free of cost one of their latest models of Slime Tables.

The Denver Engineering Works of Denver, Colorado, have supplied at below cost of manufacture one Richard's Pulsating Jig and one Richard's Pulsating Classifier.

F. W. Braun of Los Angeles, California, and H. E. T. Haultain, have jointly presented to the Assay Laboratory two Electrolytic Assaying Cabinets.

MUSEUM.

The Geological and Mineralogical Museum of the University is open to students of the Faculty of Applied Science, and is also accessible to the general public from 2 to 5 p.m. throughout the year.

The Museum is situated in the south-east corner of the ground floor of the Chemistry and Mining building, and may be entered from the door at that corner of the building.

The southern half of the room is occupied by the cases of the palæontological collection in which are arranged a large series of fossils. These specimens are placed so as to display together the great groups of animals, while the minor divisions are based on stratigraphical grounds. Particularly worthy of note are the fine series of Crinoids and Cystids and the type specimens of Eastern Canada Cambrian fossils. A large part of this collection is due to the generosity of Dr. B. E. Walker and Mr. Wm. Mackenzie. On the walls of the museum are being placed some excellent specimens of large extinct vertebrates.

To the north of the fossil collection is the Ferrier Cabinet of Minerals containing good examples of nearly all the minerals known to science, as well as a special case with specimens of the various minerals from the Cobalt Mining District.

The northern part of the room is occupied by twenty cases exhibiting all the important rocks both igneous and sedimentary which go to make up the crust of the earth.

Around the walls are placed cases containing the chief economic mineral products arranged in accordance with their practical application to human activities. This collection is particularly rich in specimens from Ontario localities and includes most of the material formerly exhibited in the Engineering building.

LIBRARY.

Rooms have been set apart in the Engineering and the Chemistry and Mining buildings for the housing of such periodicals and other literature of the University Library as is of special interest to the students of this faculty.

SOCIETIES.

THE ENGINEERING SOCIETY OF THE UNIVERSITY OF TORONTO.

Officers for 1909-1910.

<i>President</i>	W. D. Black.
<i>1st Vice-President</i>	G. Morton.
<i>Vice-President Civil & Archl. Secs.</i> ..	J. C. Murton.
<i>" Mechanical & Elec. Secs.</i>	H. W. Fairlie.
<i>" Chemistry & Mining Secs.</i> ..	C. G. Titus.
<i>Recording Secretary</i>	J. E. Ritchie.
<i>Corresponding Secretary</i>	R. A. Sara.
<i>Treasurer</i>	F. V. Munro.
<i>Permanent Secretary</i>	K. A. MacKenzie, B.A.Sc.
<i>Librarian</i>	A. E. Duncanson.
<i>Fourth Year Representative</i>	H. W. Tate.
<i>Graduates' Representative</i>	E. W. Murray.
<i>Third Year Representative</i>	E. A. Jamieson.
<i>Second Year Representative</i>	R. Fuller.
<i>First Year Representative</i>	To be elected.

The Society meets every second Wednesday during the academic year. Papers are read, and discussions are held on engineering subjects. The Society publishes a pamphlet monthly during academic year, containing the best papers read at the meetings. A supply department is run by the Society, through which all necessary instruments, etc., for drafting may be purchased.

UNIVERSITY OF TORONTO ELECTRICAL CLUB, 1909-1910.

<i>President</i>	N. Porter.
<i>Vice-President</i>	To be elected in October.
<i>Secretary-Treasurer</i>	E. A. Thompson.
<i>Councillor, IV. Year</i>	To be elected in October.
<i>Councillor, III. Year, Mech. Sec.</i>	To be elected in October.
<i>Councillor, III. Year, Elec. Sec.</i>	To be elected in October.

The Society meets every second Thursday evening during the academic year for the discussion of papers relating to mechanical and electrical engineering problems too technical for consideration in the Engineering Society. The membership is limited to members of the senior and final years.

ATHLETIC ASSOCIATION OF THE FACULTY OF APPLIED SCIENCE.

EXECUTIVE COMMITTEE, 1909-1910.

<i>Honorary President</i>	Prof. C. H. C. Wright.
<i>President</i>	Hugh C. Ritchie.
<i>Vice-President</i>	J. T. King.
<i>Secretary-Treasurer</i>	To be appointed in fall term.
<i>Fourth Year Representative</i> ...	H. Davis.
<i>Third Year Representative</i> ...	W. Carlyle.
<i>Second Year Representative</i> ...	E. Chandler.
<i>First Year Representative</i> ...	To be elected.

The Athletic Association has full control over all athletic clubs using the name of the Faculty of Applied Science. The Executive Committee has power to suspend any one from the privileges of membership in the Association for any breach of its regulations, and controls the finances of all athletic clubs in the aforesaid Faculty. The annual membership fee of this Association is fifty cents.

No other moneys are collected for the support of athletics in the Faculty of Applied Science without the sanction of the Executive Committee.

RUGBY FOOTBALL.

The Mulock Cup, which was presented by Sir Wm. Mulock, M.A., LL.D., to the University of Toronto Rugby Football Club for inter-college competition, brings out each year a large number of contestants from the University and affiliated colleges.

RUGBY FOOTBALL CLUB OF THE FACULTY OF APPLIED SCIENCE.

(Winners of Mulock Cup.)

Officers.

<i>Honorary President</i>	P. Gillespie.
<i>President</i>	W. D. Black.
<i>Vice-President</i>	H. C. Ritchie.
<i>Manager senior team</i>	W. D. Black.
<i>Captain senior team</i>	A. S. McArthur.
<i>Manager junior team</i>	J. I. McSloy.
<i>Captain junior team</i>	W. Foulds.

ASSOCIATION FOOTBALL.

In order to encourage Association Football on the College campus, the Faculty of the University of Toronto presented a cup, known as the Faculty Cup, to the Inter-College Association Football Club for annual competition among University and affiliated colleges.

ASSOCIATION FOOTBALL CLUB OF THE FACULTY OF APPLIED SCIENCE.

Officers.

<i>Honorary President</i>	Dr. Galbraith.
<i>President</i>	H. R. Carscallen.
<i>Manager of seniors</i>	W. J. Boulton.
<i>Captain of seniors</i>	E. W. Murray.
<i>Manager of Intermediates</i>	J. T. King.
<i>Captain of Intermediates</i>	G. C. Hoshal.

HOCKEY.

The trophy which is competed for annually among the Colleges in hockey is known as the Jennings Cup, and is the gift of the late W. T. Jennings, Mem., Inst. C. E.

HOCKEY CLUB OF THE FACULTY OF APPLIED SCIENCE.

Officers.

<i>Honorary President</i>	Professor Ellis.
<i>President</i>	C. T. Hamilton.
<i>Vice-President</i>	B. Neilly.
<i>Secretary-Treasurer</i>	G. C. Cowper.
<i>Manager senior team</i>	C. Webb.
<i>Manager intermediate team</i>	W. J. Boulton.
<i>Manager junior team</i>	J. I. McSloy.

TRACK CLUB.

Officers for 1909-1910.

<i>Honorary President</i>	C. H. C. Wright.
<i>President</i>	G. Woodley.
<i>Secretary-Treasurer</i>	R. T. Hyland.
<i>Fourth Year Representative</i>	V. A. E. Goad.
<i>Third Year Representative</i>	J. M. Gibson.
<i>Second Year Representative</i>	J. L. Goad.
<i>First Year Representative</i>	To be elected.

OFFICERS OF THE 2nd FIELD COMPANY CANADIAN ENGINEERS.

<i>Officer Commanding</i>	Major W. R. Lang.
<i>Captain</i>	S. P. Biggs.
<i>Acting Quartermaster</i>	T. C. Irving, Jr.
<i>Lieut. (Acting Adj.)</i>	H. N. Gzowski.
<i>Lieutenant</i>	C. S. L. Hertzberg.
<i>Lieutenant</i>	H. F. H. Hertzberg.
<i>Supernumerary</i>	D. C. Raymond.
<i>Medical Officer</i>	J. W. Barton, M.D.

UNIVERSITY OF TORONTO ATHLETIC ASSOCIATION.**Directorate.**

<i>Honorary President</i>	R. A. Falconer, D. Litt., LL.D.
<i>President</i>	Prof. A. T. DeLury.
<i>Vice-President</i>	W. W. Lailey, B.A.
<i>Secretary-Treasurer</i>	Jas. W. Barton, M.D.

Directors.

Prof. C. H. C. Wright.	Jas. D. Pearson.
R. R. Evans.	J. Ramsay.
T. R. Hanley.	L. A. Wright.

The Athletic Association is now the paramount body in University athletics, and has entire jurisdiction over the athletic clubs using the University name, and over their finances, members and policy, subject to the University authorities. Henceforth no financial agreement can be entered into by any such club without the sanction of the Directorate. No expenditure of any kind in connection with any such club can be made without the written order of the Secretary-Treasurer of the Directorate.

GYMNASIUM AND ATHLETIC GROUNDS.

"The University gymnasium was completed and equipped in 1893. It is fully provided with the best and most modern appliances for physical culture, and contains a running track, shower baths and swimming bath, besides the necessary dressing rooms and other conveniences. A competent instructor in gymnastics is in constant attendance to superintend and direct the exercises of students. In addition to the lawn in front of the Main University Building and a campus in the rear, a large plot of ground on Devonshire Place has been set apart as an athletic field. By this addition the facilities for football, cricket, tennis

and other out-door athletic sports are doubled, as compared with previous accommodation; and by these grounds, in conjunction with the gymnasium, ample opportunity is afforded to all students for healthful exercise and physical development. To assist in meeting the expenses of the gymnasium, a nominal annual fee is imposed on those who avail themselves of its advantages. The supervision of all athletic matters has been entrusted by the Council to an Athletic Board, consisting of six members appointed from the Faculty and officers of the Athletic Association. All applicants of clubs for the use of grounds must be made annually to this Board. All such applications must be accompanied by a list of officers. In the case of new clubs the list of officers must be accompanied by particulars as to the organization and objects of the club making application."

STUDENTS' UNION BUILDING.

"In 1894 additions were made to the front of the building in which the gymnasium is situated, consisting of a large hall for public meetings, a reading room and committee rooms. This additional accommodation is available for the work of the various students' societies, and for academic purposes. Applications for the use of rooms, accompanied by a list of officers and a copy of the constitution of the society making application, must be made, through the President, to the joint committee of the Councils on Gymnasium and Students' Union Building, at the beginning of the season, or from time to time as occasion requires. Arrangements have also been made by which recognized societies may obtain the use of committee rooms on application to the janitor of the Students' Union Building."

FACULTY OF APPLIED SCIENCE.

YOUNG MEN'S CHRISTIAN ASSOCIATION.

The Y.M.C.A. of the Faculty of Applied Science was organized January 27th, 1905, and forms an integral part of the University of Toronto Y.M.C.A., which is a federation of the Associations of the various Colleges and Faculties of the University. The object of the Association is to develop a true Christian manhood and to help the students in whatever way possible.

<i>Honorary President</i>	Prof. R. W. Angus.
<i>President</i>	T. A. McElhanney.
<i>Vice-President</i>	A. G. McLeish.
<i>Treasurer</i>	H. M. White.
<i>Recording-Secretary</i>	N. Vickers.

SESSION 1908-1909.

First Year.

Second Year.

MATRICULATED STUDENTS.

5 Aitken, J.	Brantford	3 D'Alton, F. K.	Weston
2 Barron, J. G....	Carberry, Man.	4 Davidson, E. I.	Toronto
1 Bartley, T. H.	Toronto	2 Davison, E. S.	
2 Batten, H. L.	Toronto		Bridgewater, N.S.
1 Berkley, G. L.	Belleville	3 DeGuerre, F. C.	Galt
3 Billings, J. H.	Leskard	3 Delamere, R. D.	Toronto
2 Bissett, J. R.	Kincardine	1 Dellabough, W. G.	Toronto
3 Boswell, W. O.	Toronto	3 Dickson, W. M.	Hamilton
1 Bowman, F.	Berlin	1 Dinsmore, H. C.	Clarksburg
3 Brachinreid, T. W. ...	Toronto	3 Downing, F. H.	Lucan
1 Bradshaw, A. C. St. Paul's Sta.		3 Drewry, H. A. ...	Winnipeg, Man.
3 Brereton, L. R.	Bethany	1 Dunbar, W.	Dunbarton
1 Brickenden, F. M.	London	1 Duncanson, A. E. ...	Toronto
1 Brock, W. M.	Thamesford	1 Earle, H. A.	Andover, Eng.
1 Brouse, W. H. D.	Toronto	5 Eckert, C.	London
3 Brown, H.	Port Sydney	3 Elliot, J. A.	Toronto
2 Buchanan, N. S.		2 Elliott, C. F.	Toronto
	Norristown, Pa.	3 Emmerson, E. R. ...	Port Arthur
3 Burrows, M. H.	Toronto	1 Evans, J. H.	Toronto
3 Cain, E. T.	Sandford	3 Farquharson, W. ...	Walkerton
1 Cameron, O. L.	Brampton	1 Farrell, K. A.	Toronto
5 Cameron, W. E.	Cornwall	3 Farrelly, T.	Alma
1 Campbell, C. D.	Preston	1 Fellowes, K. C.	Toronto
6 Chadwick, W. W.	Hamilton	1 Fennell, S. M.	Toronto
1 Chandler, R. B.	Stratford	1 Findlay, A. H.	Toronto
1 Champion, I. W.	Brantford	1 Flook, S. E.	Willowdale
3 Chesnut, E. F.	Toronto	3 Foley, C. J.	Lansdowne
1 Christner, J. C.	Innerkip	4 Forsyth, O. R.	Berlin
1 Clark, W. G.	Owen Sound	5 Frankel, E. L.	Toronto
2 Clarke, J. E.	Toronto	3 Frogley, H. W.	Toronto
3 Cleary, F. S.	Windsor	3 Fuller, R. J.	Watford
3 Clipsham, K. M.	Toronto	1 Fyfe, H. D.	Calgary, Alta.
3 Cohen, M.	Toronto	2 Garnham, W. H. ...	Port Rowan
2 Cole, D. B.	Toronto	5 Geldzaeler, B.	Toronto
3 Coleman, J. H.	Banda	3 Gemmell, H. R.	Toronto
3 Cook, A.	Ingersoll	2 Gilray, S. A.	Toronto
3 Corbould, C. E. B.		1 Goad, J. L.	Toronto
	New Westminster, B.C.	2 Godson, H. P.	Toronto
1 Cornell, C. W.	Toronto	5 Gooderham, J. L.	Toronto
2 Coumans, O. F.	Chepstow	1 Gorman, P. T.	Killaloe
3 Crouch, M. E. ...	Rochester, N.Y.	1 Grafton, S. G.	Toronto
3 Cruthers, W. M.	Oakville	3 Gravely, T. G.	Toronto
3 Cummiford, S. A. ...	Strathroy	1 Grayson, W. M.	
1 Cunningham, C. H. ...	Hamilton		Moose Jaw, Sask.
2 Curtis, W. T.	Tillsonburg	3 Green, R. E. ...	Windham Centre
1 Curzon, J. H.	Toronto	2 Gzowski, J. S.	Toronto
		3 Hall, H. G.	Woodstock

- 3 Hall, R. P. Toronto
 1 Hamilton, G. M. Toronto
 1 Hamilton, J. R. Winnipeg, Man.
 2 Harcourt, H. E. Toronto
 2 Harris, R. W. Toronto
 3 Hayden, J. M. Cobourg
 2 Heebner, M. B. Lee, Mass.
 2 Helson, F. I. Lindsay
 3 Hill, H. R. Toronto
 1 Home, C. D. Toronto
 3 Huehnergard, E. St. Jacobs
 5 Huether, J. C. Berlin
 1 Huff, A. J. Edmonton, Alta.
 1 Hyatt, H. Toronto
 1 Hyland, R. T. Toronto
 3 Irvine, J. H. Regina, Sask.
 1 Jarvis, R. H. Toronto
 4 Jessop, H. H. Toronto
 1 Jones, L. E. Sarnia
 1 Junkin, R. L. Toronto
 3 Kirkwood, M. West Toronto
 2 Lanning, J.
 Notre Dame Bay, Nfld.
 1 Lawless, N. Toronto
 3 Lawrence, W. H. Watford
 2 Lieberman, M. I. Toronto
 3 Lillie, G. L. Oakville
 6 Long, A. L. Brooklyn, N.Y.
 1 Lount, C. T. Toronto
 1 Lowrie, A. W. P. Russell
 3 Lytle, L. B. Tralee
 1 MacBeth, R. E. A. Toronto
 1 Macdonald, F. M. Toronto
 2 MacDonald, H. H. R. Eglinton
 2 Macdonald, A. G. Dawson, Y.T.
 1 Macdougall, R. H.
 Fenelon Falls
 1 MacKenzie, A. M. Staney Bræ
 3 MacKenzie, W. S. Woodstock
 1 McAndrew, J. B.
 St. Catharines
 2 McDougall, A. C. Ottawa
 3 McEachren, J. A. Strathburn
 3 McEwen, H. J. Brantford
 3 McGhie, W. G. St. Catharines
 1 McGill, S. B. Toronto
 3 McKenzie, D. A.
 Wawanesa, Man.
 2 McLean, J. G. Chatham
 1 McLellan, R. A. Harrison
 2 McPherson, W. B. Toronto
 4 Madill, H. H. Toronto
 1 Marshall, H. J. London
 3 Martin, J. C. Ponsonby
 3 Meadows, C. A. Toronto
 1 Mickleborough, K.
 Regina, Sask.
 1 Millman, N. C. Toronto
 6 Mills, L. G. Toronto
 2 Morphy, J. A. Oshawa
 2 Munro, K. Port Arthur
 1 Munson, A. H. Hamilton
 1 Murphy, M. H. Toronto
 2 Murray, H. S. Cooksville
 1 Nicholson, J. B. Hamilton
 3 Noble, E. S. Toronto
 1 Northey, R. K. Toronto
 1 Oke, W. V. Toronto
 1 Omand, W. M. Lyleton, Man.
 2 Orr, J. A. Clarkson's
 3 Parker, J. S. Blairton
 3 Parkin, J. H. Toronto
 1 Patterson, T. J. Stratford
 1 Patton, J. M. Regina, Sask.
 1 Pennington, C. W. Dundas
 1 Perkins, J. F. Petrolia
 3 Perrin, W. J. Wroxeter
 3 Phillips, J. J. Whittington
 3 Porte, E. H. Aylmer
 1 Powell, J. Toronto
 1 Pratt, F. M. Ottawa
 4 Pullan, H. Toronto
 1 Quinlan, L. J. Stratford
 3 Rankin, G. A. Toronto
 1 Ratz, J. E. Elmira
 1 Read, F. N. Owen Sound
 4 Reid, E. V. Toronto
 3 Richardson, S. M. Ingersoll
 1 Ritchie, J. E. Berkeley
 1 Robinson, W. E. Columbus
 2 Roblin, H. L. London
 3 Ross, J. Toronto
 3 Rothery, L. W. Chester, W.Va.
 1 Rowswell, H. V. Toronto
 3 Runciman, A. S. Stratford
 3 Russell, C. J. Renfrew
 3 Rutley, F. G. Toronto
 1 Salter, E. M. Toronto
 5 Scott, J. W. Toronto
 3 Seaton, N. D. Springville
 4 Sheard, P. Toronto
 3 Sheffield, C. H. Athens
 1 Sibbett, W. A. Bracebridge
 2 Sills, C. P. Seaforth
 1 Slattery, B. Ottawa
 1 Smith, K. H. Quinn
 3 Smith, E. L. C. Toronto
 3 Soules, L. V. Richmond Hill
 3 Spence, L. H. B. Toronto
 3 Squire, G. E. Wanstead
 3 Steele, S. St. Thomas
 5 Stewart, A. E. Toronto
 3 Stewart, R. O. Collingwood
 3 Story, R. A. Wawanesa, Man.

- 1 Sutherland, D. Toronto
 3 Tackaberry, S. G. Toronto
 3 Tait, D. M. St. Thomas
 3 Taylor, R. Toronto
 1 Temple, J. B. Toronto
 3 Tennyson, C. Drayton
 3 Thomas, G. C. Barrie
 3 Thomas, H. T. Queensboro
 1 Tibb, J. C. Webbwood
 2 Tonkin, C. W. Port Arthur
 1 Torrance, R. D. Guelph
 3 Torrance, T. E. Gait
 1 Tough, W. G. Toronto
 1 Trent, W. E. S. Toronto
 1 VanAlstyne, A. G. Sarnia
 1 Vickers, T. N. Renwick
 1 Vokes, V. V. Toronto
 2 Waite, J. H. C. Port Hope
 1 Walcott, W. D.

Savanna-la-mar, Jamaica.

- 3 Wallace, G. L. Greenback
 1 Wardell, A. Toronto
 1 Warrington, S. Toronto
 1 Watson, F. Errol Toronto
 1 Watson, F. Elliot Toronto
 2 Watson, G. E. Toronto
 3 Wedgewood, S. M.

West Toronto

- 3 Welford, P. G. London
 1 West, C. W. Campbellford
 2 Wheeler, A. G. Pittsburg, Pa.
 3 Wilkes, G. H. Winnipeg, Man.
 5 Williams, E. R. Toronto
 6 Williams, M. J. Toronto
 4 Wilson, C. Dundas
 3 Wilson, H. A. Glenora
 3 Wood, C. S. Sidney, B.C.
 2 Wood, G. A. Peterboro
 3 Woods, W. H. Toronto
 1 Wright, W. J. T. Toronto
 1 Wrong, F. H. Windsor
 2 Wylie, W. H. St. Catharines
 3 Wyman, H. K. Essex
 6 Yarker, J. A. London
 3 Yorke, L. P. Belmont
 3 Young, A. Binbrook
 1 Young, S. Owen Sound

NON-MATRICULATED STUDENTS.

- 3 Allan, N. F. Toronto
 1 Badgley, L. A. Canfield
 2 Browne, H. Coldwater
 2 Cameron, C. S. Beaverton
 1 Clarke, T. W. Toronto
 3 Clubine, E. C. Newmarket
 3 Coryell, W. R. Toronto
 3 Doherty, W. E. Buffalo, N.Y.

- 5 Doncaster, L. W. Toronto
 2 Earls, E. J. Toronto
 1 Goldie, R. T. Guelph
 3 Gorman, R. W. London
 1 Harman, J. A. Uxbridge
 3 Hill, T. A. Ningo, Man.
 3 Kelly, S. S. Lambeth
 3 Kerr, A. E. Hamilton
 3 Lee, R. C. Springfield, Mass.
 1 McLean, M. B. Marshville
 1 Mulqueen, F. J.

Sao Paulo, Brazil

- 3 Nixon, C. K. Detroit, Mich.
 2 O'Flynn, W. A. Calgary
 1 Parkinson, N. F. Toronto
 3 Patterson, R. D. Todmorden
 3 Robinson, J. Toronto
 4 Rowe, T. L. F. Toronto
 1 Scott, H. L. Bridgeburg
 1 Snider, F. D. Waterford
 2 Somerville, J. E. Winthrop
 1 Szammers, C. F. East Toronto

—Second year—

- 2 Adams, J. H. Toronto
 1 Alison, A. E. Toronto
 1 Allan, L. B. Toronto
 1 Amsden, W. G. Toronto
 3 Archer, E. G. Petrolia
 1 Baird, J. A. Leamington
 1 Baird, W. J. Scarboro
 1 Barnett, H. A. Toronto
 1 Barry, M. J. Westmount, Que.
 3 Bell, R. S. Toronto
 1 Berry, E. W. Seaforth
 1 Bingham, H. C. Clifford
 2 Bissett, D. G. Strathcona, Alta.
 1 Blackwell, H. Peterboro
 3 Blair, F. J. Espanola
 1 Bowman, E. P. West Montrose
 1 Brass, C. G. Toronto
 2 Brock, A. F. St. Williams
 3 Brown, R. M. West Toronto
 3 Browne, M. O. Toronto
 3 Burgess, J. R. Havelock
 3 Caldwell, N. S. Brantford
 3 Cale, W. C. Toronto
 3 Calvert, D. G. Strathroy
 1 Cameron, K. M. St. Thomas
 3 Carlisle, W. M. Toronto
 2 Charlton, O. W. N. Toronto
 1 Cherry, P. G. Winnipeg, Man.
 3 Chesnut, A. W. Toronto
 1 Chisholm, D. C. Winnipeg, Man.
 1 Clark, F. W. Toronto
 1 Clark, H. S. Port Dalhousie
 1 Claveau, J. A.

Chicoutimi, Que.

- 3 Cockburn, L. S. Toronto
3 Code, A. G. Perth
3 Cole, C. R. Woodstock
1 Colquhoun, G. A.
Vankleek Hill
5 Conway, M. E. Ottawa
1 Cooke, H. H. Toronto
4 Craig, J. H. Toronto
3 Cumming, N. S. Hamilton
3 Cunerty, T. J. Toronto
1 Davis, W. B. Ivy
3 Dean, C. D. Toronto
5 DeLaporte, A. V. Toronto
3 Dissette, A. C. Toronto
3 Dobbin, R. L. Peterboro
3 Dobson, W. P. Fordwich
3 Duncan, J. M. Toronto
1 Eadie, L. West Toronto
1 Elliott, G. R. Goderich
2 Emery, V. H. Aldershot
3 Evans, W. J. Jermyn
3 Fairlie, H. W. Queenston
3 Ferguson, C. R. Brampton
3 Ferguson, J. W. Brampton
3 Finlayson, E. H. Toronto
4 Fiskin, J. B. K. Toronto
1 Fletcher, A. W. Thornton
1 Fletcher, J. A. Fletcher
3 Flint, T. R. C. Toronto
3 Flynn, C. C. London
3 Follett, R. C. Toronto
2 Foreman, J. M. Lucan
3 Foulds, W. C. Toronto
2 Fredin, J. Crumlin
2 Freeland, E. E. Toronto
1 Freeman, J. R. Brighton
3 Gall, H. Toronto
1 Gibson, J. M. Arthur
1 Gibson, M. M. Willowdale
2 Glazier, M. B. Brockville
3 Goodeve, V. S. Toronto
1 Goodridge, H. Edmonton, Alta.
2 Gordon, W. A. Wallaceburg
3 Gorrie, D. A. Toronto
3 Graham, E. B. Brampton
2 Greene, R. L. Toronto
2 Griffith, T. G. Toronto
3 Hadcock, J. P. Orangeville
1 Hall, H. Toronto
1 Harcourt, R. M. Toronto
5 Harris, J. H. Toronto
1 Harvie, N. J. Orillia
3 Hastings, M. B. Midland
1 Helliwell, J. Toronto
1 Henderson, J. F. Toronto
3 Hickling, F. G. Dawson, Y.T.
3 Hill, A. Owen Sound
3 Hinch, E. F. Toronto
1 Hoover, O. H. Port Perry
2 Hopkins, P. E. Kinmount
1 Huffman, K. Toronto
3 Irwin, W. J. Belfast
1 Jack, R. T. G. Toronto
2 James, F. L. Tillsonburg
3 Jamieson, E. A.
Vancouver, B.C.
3 Janney, W. E. Galt
1 Jardine, W. S. Omemee
1 Jeffery, C. C. Midland
1 Johnston, H. C. Toronto
1 Johnston, R. H.
Edmonton, Alta.
3 Joy, D. G. Toronto
1 Keith, J. C. Smith's Falls
2 King, J. T. Cooksville
3 Kingstone, G. A. Toronto
2 Kerwan, G. L. Toronto
5 Kirwan, P. T. Ottawa
1 Knight, S. Bruce Mines
3 Lawler, E. R. Toronto
3 Leadman, H. L. Medina
3 Leaver, C. B. Toronto
3 Lee, R. G. Toronto
1 Leitch, J. N. Toronto
3 Lethbridge, W. R. Boxall
1 Longstaff, J. C. Toronto
3 MacAndrew, W. M. Renfrew
3 Macauley, R. V. Toronto
2 MacBain, J. T. Buffalo, N.Y.
3 MacColl, E. B. Glencoe
2 Macdonald, A. D. Sudbury
1 Macdonald, G. A. Muirkirk
1 Macdonald, J. A. Ridgetown
3 Macdonald, J. B. Victoria, B.C.
1 MacGregor, A. E.
Niagara-on-the-Lake
2 MacKay, E. G. Hamilton
1 MacLennan, G. G. Toronto
1 MacLeod, D. D. Parkhill
3 MacMurchy, H. G. Toronto
3 MacTavish, H. J. Toronto
4 McBride, T. C. London
1 McCarthy, T. V. Pembroke
1 McDougall, S. G. Ottawa
1 McElhanney, T. A. Kincardine
3 McElroy, R. W. Toronto
1 McGarry, P. J. Merritton
3 McKim, L. R. Wyecombe
2 McLaren, A. J. Ottawa
3 McLeish, A. G. Sable
1 McNiven, J. Putnam
3 McQueen, A. A. Toronto
3 McSloy, J. I. St. Catharines

- 1 McVean, R.Dresden
 2 Maisonville, A. W. R.
 Pilette's Corner
 1 Markle, G. A.Toronto
 1 Marr, N.London
 1 Martin, W. H.St. Thomas
 2 Matthews, A. C.Toronto
 1 Meader, C. H.Toronto
 3 Merriman, H. O.Hamilton
 1 Miller, D. J.Orillia
 1 Milligan, F. S.London
 3 Mills, P. E.Toronto
 5 Mitchell, L. C.Meaford
 3 Morgan, J. P.Newmarket
 1 Mortimer, F. R.Arva
 1 Munro, A. H.Peterboro
 1 Murton, J. C.Fergus
 3 Nash, J. C.London
 3 New, R. H.Toronto
 1 Newhall, V. A.Toledo, O.
 2 Newton, K. L.Toronto
 1 Nichol, F. T.Beeton
 5 O'Brian, K. B.Toronto
 1 O'Neil, C. M.
 Erindale-on-Credit
 3 Palmer, C. E.Richmond Hill
 2 Palmer, E. P. B.
 Zacatecas, Mex.
 3 Parker, G. C.Toronto
 1 Paul, R. A.Listowel
 3 Pearce, K. K.Port Hope
 1 Pearson, A. W.Weston
 3 Phillips, C. H.Toronto
 1 Pick, B. W.Glen Meyer
 1 Pye, D. E.Arnprior
 1 Railton, L. W.Bristol, Eng.
 1 Ramsey, W. S.St. John's, Nfld.
 2 Read, G. F.London Jct.
 3 Redfern, B. J.Collingwood
 3 Richardson, C. E.Toronto
 3 Richardson, W. A.
 Victoria, B.C.
 1 Ritchie, H. C.Elmvale
 1 Ross, O. W.Brantford
 1 Rubidge, W. F. B.Dixie
 3 Rudolf, O. R.
 Hampstead, Jamaica, B.W.I.
 3 Rust, F. C.Toronto
- 1 Scandrett, F. R.Belgrave
 4 Secord, H. F.Toronto
 4 Self, J. H.Toronto
 1 Sharpe, D. N.Lindsay
 3 Shaw, W. C.Toronto
 3 Sherman, N. C.Brighton
 5 Smith, G. E.Toronto
 2 Smith, F. L.Burlington
 3 Smith, M. L.
 New Westminster, B.C.
 1 Smith, W. C.Duluth, Minn.
 1 Sneath, R. G.Toronto
 2 Spry, R. J.London
 2 Steele, A. L.Fergus
 2 Steven, H. M.Toronto
 1 Stone, L. I.Toronto
 3 Sutherland, A. L.
 Edmonton, Alta.
 3 Sylvester, K. B.Lindsay
 3 Teeter, W. M.Teeterville
 3 Ternan, E. A.Arthur
 5 Thom, W. H.Watford
 3 Thompson, H. B.Wellington
 3 Thompson, R. M. A.Strathroy
 2 Titus, C. G.Westport, N.S.
 3 Train, C. W.Haileybury
 3 Utley, R. A.Toronto
 3 Van Allen, K. M.Toronto
 3 Van Dusen, W. J.
 West Toronto
 1 Wagner, N.Toronto
 3 Walker, R. F.Tillsonburg
 1 Walker, R. M.Toronto
 2 Walton, T.London
 1 Warrington, G. A.Cornwall
 3 Watson, M. B.Emery
 3 White, H. M.Chatham
 1 Whitside, L.Delhi
 4 Wickens, W. S.Toronto
 3 Williams, G. K.Toronto
 3 Wilson, H. P.Toronto
 2 Wilson, J. D.Adelaide
 1 Wilson, W. H.Merritton
 3 Woodley, G. E.Waterford
 1 Worden, W. G.St. Thomas
 3 Wright, L. A.Toronto
 3 Youell, A. W.Aylmer
 1 Young, W. S.Guelph

Third Year.

3 denotes Mechanical and 3¹ Electrical option.

- 3 Arens, E. G.Orillia
 3 Armstrong, H. V.Trenton
 2 Austin, E. T.Whitby
 3 Barry, W. H.Niagara Falls
- 3¹ Beckstedt, R. D. S.
 Lake Lenore, Sask.
 3¹ Beith, R.Toronto
 1 Bennett, G. A.Eden

3 Birchard, E. R.	Linden Valley	1 Harvey, D. W.	London
3 ¹ Bitzer, A. M.	Berlin	1 Hay, C. O.	Falkenburg
3 Black, W. D.	Toronto	3 ¹ Hemphill, J.	Kleinburg
3 ¹ Blizard, D. C.	Toronto	1 Hogarth, G.	Toronto
1 Boulton, W. J.	Wallaceburg	3 ¹ Holmes, A.	Owen Sound
3 ¹ Bowen, G. H.	Toronto	3 Holmes, C. R.	Chatham
3 ¹ Brown, C. E.	Meaford	1 Hopkins, C. H.	Lindsay
1 Browne, E. W.	London	1 Hoshal, G. C.	Niagara Falls
1 Buchanan, J. A.	Comber	3 Hughes, C.	Toronto
3 Burns, J.	Toronto	1 Hunter, A. E.	Wiarton
1 Cameron, M. G.	Peterboro	3 ¹ Irwin, H.	Hillsburgh
3 ¹ Campbell, R. A.	Alliston	3 ¹ Isbister, J.	Wingham
1 Chesnut, V. S.	Toronto	3 ¹ Jackes, F. P.	Thornhill
1 Cline, C. G.	East Amora, N.Y.	1 Jackson, J.	Oxford Centre
5 Collinson, W. G.	Seeley's Bay	1 James, E. W.	Winnipeg, Man.
1 Collinson, J. G.	St. Thomas	1 Johnson, C. C.	Toronto
1 Coltham, G. W.	Aurora	1 Johnston, C. E.	Toronto
3 ¹ Cooch, H. A.	Toronto	1 Johnston, W. J.	St. Catharines
3 Corman, W. E.	Stoney Creek	1 Kean, D. J.	Gamebridge
3 ¹ Crosby, T. H.	Vancouver, B.C.	1 Keffer, A. H. E.	Toronto
3 ¹ Cunningham, R. H.	London	3 ¹ Kemp, J. B. O.	Toronto
1 Dallyn, F. A.	Toronto	3 ¹ Kettle, T. H.	Toronto
3 Danks, C. N.	Toronto	3 Key, W. R.	Toronto
1 Dann, E. M.	London	5 Klotz, H. N.	Toronto
3 ¹ Davis, H. W.	Newmarket	3 ¹ Lamont, A. W.	Roome
2 Davis, A. I.	Toronto	3 Langmuir, C. B.	Toronto
1 Davis, H. C.	Burlington	3 Lennox, A. E.	Orillia
1 Dawson, I. H.	St. Catharines	1 Lloyd, N. C. A.	Schomberg
3 ¹ Derham, W. P.	Ottawa	1 Loucks, R. W. E.	Delisle, Sask.
3 Delahaye, W. H.	Pembroke	3 ¹ Macfarlane, E. D.	Victoria, B.C.
5 Dodds, W. A.	Bolton	1 Mackinnon, J. G.	Milverton
1 Douglas, R. H.	Banff, Alta.	1 MacLachlan, W. A.	Guelph
6 Duff, A. R.	Toronto	3 MacLean, B. A.	Orillia
1 Duff, M. O.	Hamilton	1 Macpherson, N. W.	St. Thomas
2 Duthie, L. J.	Toronto	3 ¹ McAlpine, D. D.	Iona
1 Falconer, F. S.	Shelburne	1 ¹ McArthur, A. S.	Toronto
3 ¹ Fargey, T. A.	Belleville	3 ¹ McCollum, C. R.	Welland
3 Ferguson, A. T.	Toronto	3 ¹ McCordick, A. S.	St. Catharines
1 Ferguson, J. B.	Kenora	3 ¹ McCuaig, P. J.	Gamebridge
1 Foster, W. J.	Windsor	3 McIntosh, W. G.	Seaforth
1 Fraser, A.	London, Eng.	1 ¹ McKechnie, F. H.	Woodstock
3 ¹ Freeman, T. E.	Freeman	3 ¹ McKnight, J. H.	Simcoe
3 Frost, E. R.	Tweed	3 McLeod, G.	Armou
1 Glover, A. E.	Calgary, Alta.	1 ¹ McMillan, V.	Port Hope
1 Goad, V. A. E.	Toronto	3 Manning, N.	Oshawa
5 Gooderham, A. E.	Toronto	1 Manson, A. B.	Fairview
3 Gourlay, V. F.	Galt	1 Martindale, E. S.	Kingsmill
1 Graham, D. A.	Ivan	1 Martyn, O. W.	Mitchell
2 Grant, R. R.	Toronto	2 Morris, C. A.	Toronto
1 Gray, J. E.	Uxbridge	3 ¹ Morton, G.	Carluke
1 Greene, G. E. D.	Toronto	1 Munro, F. V.	Chatham
1 Greene, W. H.	Toronto	1 Neville, E. A.	Ruthven
1 Gunn, W. W.	Toronto	1 Newton, J.	Sarnia
3 ¹ Hagerman, F. G.	Cobourg	3 ¹ Niebel, E. H.	Norwood
3 ¹ Hall, R. H.	Peterboro	3 Odell, L. S.	Odell
3 ¹ Harper, C.	Calgary, Alta.		
5 Harris, F. K.	Toronto		

3¹ O'Donnell, V. J.Merrickville
 1 O'Gorman, C. A.Depot Harbour
 3¹ O'Hearn, J. J.Toronto
 1 Pae, A. W.Barrie
 1 Patterson, E. B.Toronto
 1 Petry, A. M.Toronto
 3¹ Philp, W. M.Penryn
 1 Pigott, R. B.Hamilton
 2 Ponton, G. M.Belleville
 3¹ Porter, C. J.Port Dover
 3¹ Proctor, A. I.Hamilton
 1 Quail, J.Toronto
 1 Ramsperger, A. F.

Humber Bay

1 Redfern, C. R.Toronto
 3¹ Rutledge, L. T.Glen Williams
 1 Sanderson, A. U.Toronto
 3¹ Sara, R.Toronto
 3¹ Schlarbaum, A.Galt
 3¹ Schwenger, C.Hamilton
 1 Scott, C. A.Toronto
 1 Sedgwick, A.Windsor
 1 Segre, B. H.

Savanna la Mar, Jamaica.

B.W.I.

1 Seibert, F. V.Southampton
 5 Shaw, M. R.Forest
 3¹ Sparling, M. W.Davisville
 3 Spence, J. J.Toronto
 1 Stayner, D. S.Toronto
 3 Stewart, J. D.Chesley

1 Stewart, N. C.Nelson, B.C.
 1 Stock, P. H.Toronto
 1 Street, J. C.Ottawa
 3¹ Stroud, S.Hamilton
 1 Sutherland, C. C.

Edmonton, Alta

1 Swan, R. G.Kincardine
 1 Sword, A. D.Toronto
 1 Tate, H. W.Wimbledon, Eng.
 3¹ Thompson, E. A.Teeswater
 1 Tipper, G. A.Brantford
 3 Trees, A. G.Toronto
 3 Turnbull, W. G.Toronto
 1 Underwood, J. E.Lakelet
 1 Van Norman, C.Toronto
 1 Van Nostrand, J.Toronto
 1 Vatcher, A.Freshwater, Nfld.
 1 Walker, C. M.Guelph
 1 Webb, E.Orillia
 1 Webb, C. E.Toronto
 3¹ White, F. C.Chatham
 3¹ Whitelaw, A. R.

Brandon, Man.

1 Wilkinson, R. G.Aberarder
 5 Williams, J. A. Mc.Toronto
 1 Williamson, O. G. T.Guelph
 3 Wilson, L. R.Brampton
 3 Wilson, F. F.Harriston
 2 Wookey, S. A.Otter Flat, B.C.
 1 Workman, G. R.Tillsonburg

Fourth Year.

3¹ Akers, H. G.Toronto
 3 Amos, W. L.Guelph
 3¹ Brady, W. S.Toronto
 1 Brecken, P. R.Toronto
 1 Brown, J. A.Sarnia
 3¹ Buchan, P. H.Vancouver, B.C.
 1 Bush, C. E.Toronto
 3 Campbell, A. W.Melita, Man.
 1 Carscallen, H. R.Calgary, Alta.
 1 Chesnut, F. H.Toronto
 4 Collett, W. C.Toronto
 1 Cory, R. Y.Toronto
 1 Cowper, G. C.Welland
 3¹ Coyne, H.St. Thomas
 2 Culbert, J. V.London
 6 Dahl, A. D.Dutton
 3¹ Davis, R. S.Schomberg
 2 Dyer, F. C.Toronto
 1 Edwards, C.Toronto
 1 Flanagan, O. L.Gore Bay
 1 Foster, A. H.Guelph
 3¹ Gear, S. S.Fort Erie

1 Gillies, A.St. Thomas
 3¹ Gulley, C. L.Uxbridge
 3 Hackner, J. W.Sandford
 3¹ Hall, K.Hamilton
 1 Hamilton, C. T.Fort William
 1 Hendry, M. C.Toronto
 5 Huether, D. J.Neustadt
 1 Huether, A. D.Wiarton
 3¹ Hunter, A. N.Toronto
 3¹ Iler, S. B.Belleville
 1 Jackson, W.Ridgeway
 1 Keppy, J. D.Toronto
 1 Lamb, F. C.Walkerton
 3¹ Leslie, J. N. M.Elora
 1 McLean, L. A.Hensall
 1 McMordie, H. C.London
 1 McRoberts, A. A.Pontypool
 1 Marshall, R. J.Erin
 3¹ Minns, J. B.Toronto
 3¹ Monk, E. D.Cornwall
 3 Moody, F. H.Toronto
 3¹ Morice, J. H.Niagara Falls

3 ¹ Mowbray, F. E. H.....Kinsale	3 ¹ Shaw, W. E. V..Sidney, N.S.W.
1 Murdock, C. R. ....Brampton	3 ¹ Shearer, H. F. ....Vittoria
3 Murray, W. P. ....Fairview	1 Stamford, W. L. ....Dundas
1 Murray, E. W. ....Seaforth	3 ¹ Starr, R. ....Toronto
1 Peckover, H. J. ....Toronto	Stewart, R. B., B.A....Toronto
1 Pequegnat, M. ....Berlin	1 Stewart, W. M. ....Hamilton
3 Pivnick, M. ....Maxwell	3 ¹ Stiver, J. L. ....Mount Albert
3 ¹ Prochnow, F. E.	1 Stuart, H. B. ....Mitchell
Wilmington, Del.	1 Summers, G. F. ....Winchester
1 Proctor, E. M. ....Sarnia	3 ¹ Thomas, V. C.....Toronto
3 ¹ Publow, C. F.	1 Thornley, J. H. ....London
Pilot Mound, Man.	3 ¹ Wedlake, R. M.....Brantford
1 Ransom, J. T. ....Toronto	3 ¹ White, W. J.....Clare, S.A.
1 Redfern, W. B. ....Toronto	3 Wilson, F. D. ....Toronto
1 Robertson, A. R. ....Toronto	3 ¹ Zimmer, A. R.....Toronto
2 Rose, R. R. ....Guelph	

The number prefixed indicates department in which diploma was obtained.

Occasional Students.

Hassan, E. A. ....Ottawa.
Arts Students taking instruction in Applied Chemistry, Assaying, etc.
Allin, A. E. ....Windsor.
Barlow, F. J. ....Toronto.
Firth, T. ....Edgehill.
Swain, J. M. ....Stratford.

Summary.

First Year Students	271
Second Year Students	235
Third Year Students	175
Fourth Year Students	73
Occasional Students	1
Arts Students	4

759

PRIZEMEN.

Engineering.

1879.	I.	Year.....	J. McAree	1st	Prize.
1880.	II.	"	J. L. Morris.....	1st	"
1881.	I.	"	G. H. Duggan.....	1st	"
	II.	"	D. Jeffrey	1st	"
1882.	I.	"	A. R. Raymer.....	1st	"
	I.	"	E. W. Stern.....	2nd	"
	II.	"	G. H. Duggan.....	1st	"
	III.	"	D. Jeffrey	1st	"
1883.	I.	"	B. A. Ludgate.....	1st	"
	I.	"	A. M. Bowman.....	2nd	"
	II.	"	A. R. Raymer	1st	"
	II.	"	E. W. Stern	2nd	"
	III.	"	G. H. Duggan.....	1st	"
1884.	II.	"	B. A. Ludgate.....	1st	"
	III.	"	E. W. Stern	1st	"
	III.	"	A. R. Raymer.....	2nd	"
1885.	I.	"	A. E. Lott.....	1st	"
	I.	"	J. Rogers	2nd	"
	II.	"	T. K. Thomson	1st	"
	III.	"	B. A. Ludgate.....	1st	"
1886.	I.	"	C. H. C. Wright.....	1st	"
	I.	"	J. E. Ross.....	2nd	"
	II.	"	A. E. Lott.....	1st	"
1887.	I.	"	H. E. T. Haultain.....	1st	"
	II.	"	C. H. C. Wright.....	1st	"
	III.	"	A. E. Lott.....	1st	"
	III.	"	J. Rogers	2nd	"
1888.	I.	"	E. B. Merrill	1st	"
	I.	"	F. M. Bowman.....	2nd	"
	II.	"	D. D. James.....	1st	"
	III.	"	C. H. C. Wright.....	1st	"
1889.	I.	"	J. K. Robinson.....	1st	"
	I.	"	G. E. Silvester.....	2nd	"
	II.	"	E. B. Merrill	1st	"
	II.	"	F. M. Bowman.....	2nd	"
	III.	"	D. D. James.....	1st	"
1890.	I.	"	C. Fairchild	1st	"
	II.	"	E. B. Merrill	2nd	"
	III.	"	J. K. Robinson.....	1st	"
	III.	"	F. M. Bowman.....	1st	"
1891.	I.	"	A. J. McPherson.....	1st	"
	I.	"	R. B. Watson.....	2nd	"
	II.	"	J. B. Goodwin.....	1st	"
	III.	"	G. E. Silvester.....	1st	"
	III.	"	C. W. Dill.....	2nd	"
1892.	I.	"	A. E. Bergey.....	1st	"
	I.	"	R. W. Angus.....	2nd	"
	II.	"	A. J. McPherson.....	1st	"
	II.	"	R. B. Watson.....	2nd	"
	III.	"	E. J. Laschinger.....	1st	"
	III.	"	C. Fairchild	2nd	"

The Grant of prizes was withdrawn at the close of 1892.

Architecture.

The prize in Architecture was the gift of Mr. D. B. Dick, Architect, Toronto.

1891. I. Year.....	H. F. Ballantyne.
1892. I. Year.....	J. A. Ewart.
1893. I. Year.....	A. H. Harkness.
1894. I. Year.....	E. A. Forward.
1895. I. Year.....	W. F. Scott.
1896. I. Year.....	D. Macintosh.
1899. I. Year.....	W. F. Shepherd.

Civil Engineering.

Prizes are awarded for general proficiency in the subjects of the Third Year.

Date.	Name.	Donor.
1897. M. B. Weekes.....	T. Kennard	Thomson, C.E.
1898. J. A. Stewart.....	"	"
1899. T. Shanks	"	"
1900. E. H. Phillips.....	"	"
1901. H. P. Rust.....	"	"
1902. W. F. Ratz.....	"	"
1903. C. R. Young.....	"	"
1904. W. N. Moorhouse.....	"	"
1905. W. Barber	"	"
1905. N. L. Crosby.....	Noel Marshall,	Esq.
1906. W. P. Near, B.A.....	T. Kennard	Thomson, C.E.
1906. W. A. M. Cook.....	Noel Marshall,	Esq.
1907. M. K. McQuarrie.....	T. Kennard	Thomson, C.E.
1907. T. H. Hogg.....	Noel Marshall,	Esq.
1908. M. Pequegnat	T. Kennard	Thomson, C.E.

Mining Engineering.

1905. G. S. Scott.....	Hon. W. H. Montague, M.D.
1905. W. A. Begg.....	"
1906. J. A. McKenzie.....	"
1906. W. Huber	"
1907. B. Neilly	"

Mechanical Engineering.

1905. W. G. Nicklin.....	Standard Silver Co.
1906. D. W. Marrs.....	" " "
1907. H. O. Hill	" " "

Electrical Engineering.

1905. C. E. Sisson.....	Noel Marshall, Esq.
1906. A. H. Hull.....	" " "
1907. F. R. Ewart	" " "

Mechanical and Electrical Engineering. . .

1897. A. T. Gray.....	F. A. Riehle, Esq.
1898. F. C. Smallpiece.....	"
1905. C. B. Aylesworth.....	Standard Silver Co.
1906. E. M. Wood.....	" " "
1907. H. Raine	" " "

Architecture.

1906. A. W. McConnell.....	Hon. W. H. Montague, M.D.
1907. G. N. Molesworth.....	"

Analytical and Applied Chemistry.

1906. C. C. Forward.....	Standard Silver Co.
1907. P. F. Morley.....	" " "

Degree of Bachelor of Applied Science.

Date of admission.	Name.	Date of admission.	Name.
1908.*Allen, F. G.		1903. Brereton, W. P.	
1893. Alison, T. H.		1907. Brian, M. E.	
1908. Anderson, F. J.		1896. Brodie, W. M.	
1897.*Angus, R. W.		1906. Brown, T. D.	
1904.*Angus, H. H.		1895. Bucke, W. A.	
1901. Ardagh, E. G. R.		1907. Bunnell, A. E. K.	
1907. Armer, J. C.		1906. Burnham, F. W.	
1896. Armstrong, J.		1900. Burnside, J. T. M.	
1897.*Bain, J. W.		1905. Burwash, N. A.	
1907. Baker, M. H.		1905. Campbell, A. J.	
1894.*Ballantyne, H. F.		1905. Campbell, A. M.	
1907.*Banting, E. W.		1898. Carpenter, H. S.	
1906.*Barber, W.		1899. Carter, W. E. H.	
1901. Barley, J. H.		1903.*Chace, W. G.	
1907. Bates, M.		1903.*Chadsey, S. B.	
1907.*Betts, H. H.		1898. Charlton, H. W.	
1902. Barrett, R. H.		1894.*Chewett, H. J.	
1895. Beauregard, A. T.		1903.*Christie, W.	
1906. Begg, W. A.		1905. Christie, U. W.	
1908.*Beynon, D. E.		1906. Coates, P. C.	
1903. Blair, W. J.		1905.*Code, T. F.	
1902.*Boswell, M. C.		1900.*Chubbuck, L. B.	
1908. Bowman, H. D.		1902. Cockburn, J. R.	
1899. Boyd, W. H.		1907.*Cook, W. A. M.	
1902. Brandon, E. T.		1900. Coulthard, R. W.	
1907. Brandon, H. E.		1907. Cousins, E. L.	

*Degree with honours.

Degree of Bachelor of Applied Science—*Continued.*

Date of admission. Name.	Date of admission. Name.
1901. Craig, J. A.	1898. Gray, A. T.
1905. Crerar, S. R.	1905. Gray, W. W.
1906.*Crosby, N. L.	1905. Greenwood, W. K.
1903.*Culbert, M. T.	1907. Guest, W. S.
1907. Daniels, W. N.	1901. Guy, E.
1901. Davison, J. E.	1908.*Hagarty, R. E. W.
1905. Davison, A. E.	1897.*Haight, H. V.
1907.*Death, N. P. F.	1904. Hamilton, J. F.
1902. DeCew, J. A.	1907. Hamilton, C. B.
1901. Dickson, G. W.	1905. Hanes, G. S.
1901.*Dixon, H. A.	1900. Hare, W. A.
1896. Dobie, J. S.	1897.*Harkness, A. H.
1907. Dundass, C. S.	1908.*Harkness, A. L.
1902.*Eason, D. E.	1906. Harris, C. J.
1904. Edwards, W. M.	1908. Harrison, E.
1897.*Elliott, H. P.	1907. Hartney, J. C.
1903. Empey, J. M.	1902. Harvey, C.
1908. Evans, S. D.	1901. Hemphill, W.
1895.*Ewart, J. A.	1895. Herald, W. H.
1908.*Ewart, F. R.	1906.*Heron, J. B.
1904. Fensom, C. J.	1907. Hett, S.
1906. Ferguson, G. H.	1906. Hewson, W. G.
1906.*Fierheller, H. S.	1908.*Hill, H. O.
1905.*Ford, A. L.	1908.*Hogg, T. H.
1901. Foreman, W. E.	1901. Holcroft, H. S.
1908. Fux, P. C.	1908. Hookway, C. W.
1904.*Gaby, F. A.	1907. Hopkins, C. H.
1903.*Gagné, S.	1908.*Hull, A. H.
1908.*Galt, G.	1896. Hull, H. S.
1904. Gardner, J. C.	1908.*Hutton, C. H.
1908.*Garrow, A. B.	1908. Hyland, H. M.
1903.*Gibson, A. E.	1908. Hyman, E. W.
1904.*Gibson, N. R.	1908.*Ireland, L. G.
1904. Gibson, W. S.	1894. James, D. D.
1904.*Gillespie, P.	1905. James, E. A.
1894. Goodwin, J. B.	1893. James, O. S.
1908.*Graham, C. W.	1905. Jermyn, P. V.
1899. Grant, W. F.	1905.*Job, H. E.
1908. Grasett, C. S.	1895. Johnson, S. M.

*Degree with honours.

Degree of Bachelor of Applied Science—*Continued.*

Date of admission.	Name.
1902.	Johnson, J. A.
1896.	Johnson, A. C.
1907.	Johnston, C.
1907.	Jones, G. R.
1907.	Jones, T.
1907.	Jupp, A. E.
1908.	Kay, E. W.
1894.*	Keele, J.
1908.	Kinghorn, A. A.
1903.	Knight, R. H.
1899.	Kormann, J. S.
1894.	Laidlaw, J. T.
1893.	Laing, A. T.
1906.	Lancaster, H. M.
1907.	Lang, J. L.
1903.	Langmuir, F. L.
1893.*	Laschinger, E. J.
1901.	Latham, R.
1906.	Latornell, A.
1906	Latornell, A. J.
1893.*	Lawson, W.
1893.	Lea, W. A.
1908.	LePan, A. D.
1908.	Linton, A. P.
1906.*	Loudon, T. R.
1907.	MacKenzie, K. A.
1894.	McAllister, A. L.
1895.	McAllister, J. E.
1893.	McAree, J.
1905.	McAuslan, H. J.
1904.	McBride, A. H.
1907.*	McConnell, A. W.
1905.	McCuaig, O. B.
1893.	McEntee, B.
1905.	McEwen, G. G.
1904.	McFarlane, J. A.
1906.	McFarlane, W. G.
1908.*	McFarlane, J. B.

Date of admission.	Name.
1905.*	McGibbon, C. P.
1896.*	McGowan, J.
1908.*	McGugan, D. J.
1905.	McKay, C. D.
1896.*	McKinnon, H. L.
1903.	McMaster, A. T. C.
1901.	McMillan, J. G.
1908.	McNeill, F. W.
1894.*	McPherson, A. J.
1895.	McTaggart, A. L.
1902.*	McVean, H. G.
1897.	Macallum, A. F.
1897.	Macbeth, C. W.
1904.	Macintosh, D.
1907.*	MacLachlan, W.
1908.	Malcolmson, W. S.
1905.	Marriott, F. G.
1897.	Martin, T.
1908.	Mason, D. H. C.
1903.*	Matheson, P.
1908.	Melson, J. W.
1907.*	Menzies, J. M.
1894.*	Merrill, E. B.
1908.	Miller, L. R.
1908.	Mills, G. G.
1893.	Milne, C. G.
1896.	Mines, W. H.
1895.*	Minty, W.
1894.	Mitchell, C. H.
1907.	Mitchell, B. F.
1906.	Moffatt, R. W.
1900.	Monds, W.
1905.*	Montgomery, R. H.
1908.	Moore, J. M.
1906.	Munro, G. R.
1907.*	Near, W. P.
1901.	Neelands, E. V.
1908.	Neelands, E. W.

*Degree with honours.

Degree of Bachelor of Applied Science—*Continued.*

Date of admission.	Name.
1908.	Neilly, B.
1904.	Nevitt, I. H.
1907.	Nicklin, W. G.
1908.	Nourse, A. E.
1904.	Oliver, E. W.
1904.	Pace, J. D.
1905.	Pace, G.
1906.*	Pardoe, W. S.
1907.	Park, D. G.
1905.	Parke, J.
1904.	Patten, B. B.
1906.	Phillips, E. P. A.
1904.	Plunkett, T. H.
1901.	Pope, A. S. H.
1907.	Porte, W. B.
1903.*	Powell, G. G.
1902*	Price, H. W.
1907.	Purser, R. C.
1908.	Quance, G. E.
1906.	Ramsey, G. L.
1905.	Raymond, D. C.
1906.	Reid, F. B.
1900.*	Revell, G. E.
1900.	Richards, E.
1908.	Richardson, C. W. B.
1906.*	Riddell, M. R.
1901.	Roaf, J. R.
1903.	Robertson, H. D.
1907.	Robertson, N. R.
1898.*	Robinson, A. H. A.
1908.	Roddick, J. O.
1907.	Rogers, C. H.
1907.	Rolfson, O.
1907.	Ross, R. C.
1907.*	Rothwell, T. E.
1905.	Roxborough, G. S.
1905.	Rutherford, F. N.
1902.	Rust, H. P.
1902.	Sauer, M. V.

Date of admission.	Name.
1901.	Saunders, H. W.
1905.*	Scheibe, H. M.
1908.*	Scott, W. A.
1900.*	Shanks, T.
1905.	Sheply, J. D.
1895.	Shields, J. D.
1899.	Shipley, A. E.
1906.	Shirriff, C. H.
1903.	Sinclair, D.
1906.	Slater, F. W.
1902.*	Smallpiece, F. C.
1898.	Smiley, R. W.
1908.*	Smith, D. A.
1904.	Smith, H. G.
1905.	Smither, W. J.
1908.	Smithrim, E. R.
1894.*	Speller, F. N.
1908.*	Spencer, A. C.
1894.	Squire, R. H.
1902.	Stevenson, W. H.
1908.	Stewart, L. D. N.
1908.*	Stiles, J. A.
1898.*	Stull, W. W.
1903.	Sutherland, W. H.
1906.	Swan, W. G.
1903.	Teasdale, C. M.
1900.*	Tennant, D. C.
1901.	Tennant, W. C.
1908.	Thompson, P. N.
1893.	Thomson, R. W.
1905.	Thomson, S. E.
1906.	Thomson, L. R.
1907.	Thomson, J. E.
1908.	Thomson, O. R.
1901.	Thorne, S. M.
1901.	Thorold, F. W.
1908.	Tillson, E. D.
1905.	Townsend, C. J.
1905.*	Townsend, D. T.

*Degree with honours.

1906. Traill, J. J.	1905.*Williams, C. G.
1904. Trees, S. L.	1899.*Williamson, D. A.
1896. Tremaine, R. C. C.	1904.*Wilson, N. D.
1905. Trimble, A. V.	1908.*Wilson, J. N.
1905. Tucker, B. B.	1908. Wilson, A. F.
1906.*Turner, W. E.	1908.*Wood, E. M.
1900. Wagner, W. E.	1905. Worthington, W. R.
1906. Wagner, H. L.	1893.*Wright, C. H. C.
1905.*Walker, E. W.	1902. Wright, R. T.
1906. Watson, J. P.	1905. Wright, W. F.
1898. Weekes, M. B.	1905.*Young, C. R.
1901. Weir, H. M.	1907. Young, W. H.
1906.*Wells, A. F.	1903. Zahn, H.
1908.*Wilkes, E. D.	

Degree of Civil Engineer (C.E.).

1898. Alison, T. H.	1908. Macallum, A. F.
1898. Ashbridge, W. T.	1885. Morris, J. L.
1895. Bowman, A. M.	1896. Moore, J. E. A.
1893. Bowman, F. M.	1898. Mitchell, C. H.
1892. Chewett, H. J.	1901. McDowall, R.
1900. Connor, A. W.	1895. McAllister, J. E.
1901. Francis, W. J.	1889. Tyrrell, J. W.
1900. Haultain, H. E. T.	1894. Tyrrell, H. G.
1893. Innes, W. L.	1892. Thomson, T. K.
1886. Kennedy, J. H.	

Degree of Mining Engineer (M.E.).

1900. Laidlaw, J. T.	1897. Bucke, M. A.
----------------------	--------------------

Degree of Mechanical Engineer (M.E.).

1908. Fensom, C. J.	1905. Laschinger, E. J.
1901. Johnston, A. C.	1900. White, A. V.

Degree of Electrical Engineer (E.E.).

1896. Ross, R. A.	1902. Elliott, H. P.
1903. Chubbuck, L. B.	1905. Hemphill, W.

*Degree with honours.

GRADUATES.

Graduates are requested to inform the Secretary of changes in their addresses.

1881.

Course.	Name and address.	Occupation.
1. J. L. Morris, C.E., O.L.S.	Morris and Moore, Pembroke, Ont.	Land Surveyors and Architects.

1882.

1. D. Jeffrey	Contractor. Windsor, Missouri.	
1. J. H. Kennedy, C.E., O.L.S.	Chief Engineer, Vancouver, Victoria Keremeos, B.C.	& Eastern Railway.
1. J. McAree, B.A.Sc., D.T.S.	(Deceased.)	

1883.

1. D. Burns, O.L.S.	Instructor in Mathematics and Plan A.M., Can. Soc. C.E., Pittsburgh, Pa.	Drawing, Carnegie Technical Schools.
1. G. H. Duggan	Dominion Coal Co., Ltd. M. Can. Soc. C.E., Glace Bay, N.S.	
1. J. W. Tyrrell, C.E., D.L.S. ...	Consulting Engineer and Surveyor. Hamilton, Ont.	

1884.

1. W. C. Kirkland.....	Principal Asst. Engineer, Drainage, New Orleans, La.	Sewage and Water Board of New Orleans.
1. J. McDougall, B.A.	(Deceased.)	
1. A. R. Raymer	Asst. Chief Engineer, P. & L. E. Ry. Pittsburgh, Pa.	
1. James Robertson, O.L.S.	Commissioner, Toronto, Ont.	The Canada Co.
1. E. W. Stern	Consulting Engineer. M. Am. Soc. C.E., Park Ave. and 41st St. New York.	

1885.

Course.	Name and address.	Occupation.
1. J. F. Bleakley	Civil Engineer. Bowmanville, Ont.	
1. H. J. Bowman, D. & O.L.S.....	Bowman & Connor. M. Can. Soc. C.E., Berlin, Ont.	
1. E. E. Henderson, O.L.S.	Civil Engineer. Henderson, P.O., Me.	
1. B. A. Ludgate, O.L.S.....	Asst. Engineer, P. & L. E. Ry. Pittsburgh, Pa.	
1. O. McKay, O.L.S.....	Civil Engineer and Surveyor. Walkerville, Ont.	

1886.

1. A. M. Bowman, D.L.S.	Pennsylvania Contracting Co. Pittsburgh, Pa.	
1. E. B. Hermon, D. & O.L.S.....	Asst. Engineer Vancouver Power Co. Vancouver, B.C.	
1. Robert Laird, O.L.S.....	Laird & Routly, Engineers and Sur- Haileyburg, Ont.veyors.	
1. T. Kennard Thomson, C.E.....	Consulting Engineer. M. Can. Soc. C.E., M. Am. Soc. C.E., Hudson Terminal Bldg. New York.	
1. H. G. Tyrrell, C.E.....	Chief Engineer, A.M. Can. Soc. C.E., 2151 Fulton Ave., Cincinnati, O.	The Brackett Bridge Co.

1887.

1. J. C. Burns (deceased).		
1. A. E. Lott.....	Consulting Railway Engineer, Los Angeles, Cal.	441 Bradbury Building.
1. A. L. McCullough, O.L.S.....	City Engineer. A.M. Can. Soc. C.E., Nelson, B.C.	
1. F. Martin, M.B., O.L.S.....	Physician.	
1. C. H. Pinhey, D. & O.L.S.....	110 Wellington St. Ottawa, Ont.	
1. J. Rogers, O.L.S.....	Town Engineer. Mitchell, Ont.	

1888.

Course.	Name and address.	Occupation.
1. J. F. Apsey, O.L.S.....	Asst. Div. Engineer. 3205 Wallbrook Ave., Baltimore, Md.	Baltimore Sewerage Commission.
1. W. T. Ashbridge, C.E.....	Engineer and Surveyor. 1444 Queen St. E., Toronto, Ont.	
1. Edward F. Ball.....	Asst. Engineer of Resurveys, Central A.M. Can. Soc. C.E., 335 Madison Ave., New York, N.Y.	& Hudson River Railroad.
1. D. B. Brown, O.L.S.....	Locating Engineer, Quebec, P.Q.	Transcontinental Ry. (G.T.P.)
1. C. M. Canniff.....	Engineer, Expanded Metal and Fire- Toronto, Ont.	Proofing Co., Ltd.
1. H. J. Chewett, B.A.Sc., C.E....	Mechanical Engineer, Evans Rotary A.M. Can. Soc. C.E., Manning Arcade, Toronto, Ont.	Engine Co., Ltd.
1. J. Gibbons, D. & O.L.S.....	Surveying Staff, Dept. of Interior. Ottawa, Ont.	
1. R. McDowall, O.L.S., C.E.....	Town Engineer. A.M. Can. Soc. C.E., Owen Sound, Ont.	
1. G. W. McFarlen, O.L.S.....	City Engineer's Staff. Toronto, Ont.	
1. C. J. Marani.....	Designing and Consulting Structural Anacortes, Wash.	Engineer for the Russia Cement Co.
1. G. R. Mickle, B.A.....	Mine Assessor, Toronto, Ont.	Province of Ontario.
1. J. H. Moore, O.L.S.....	Town Engineer. Smith's Falls, Ont.	
1. G. H. Richardson.....	Contractors' Engineer, Hervey Junct., Que.	Transcontinental Ry.
1. K. Rose	Manager, Evans Rotary Engine Co. Curry Bldg., Toronto.	of Canada.
1. J. E. Ross, D. & O.L.S.....	Surveying Staff, Dept. of Interior. Kamloops, B.C.	
1. C. H. C. Wright, B.A.Sc.....	Professor of Architecture, Toronto, Ont.	University of Toronto.

1889.

Course.	Name and address.	Occupation.
1. B. Carey	Toronto, Ont.	
1. W. J. Chalmers.....	Draftsman, Office U.S. Engineer. Pittsburgh, Pa.	
1. W. A. Clement.....	City Engineer. M. Can. Soc. C.E., Vancouver, B.C.	
1. G. F. Hanning.....	Toronto, Ont.	
1. H. E. T. Haultain, C.E.....	Associate Professor of Mining En- gineering, University of Toronto. M. Can. Soc. C.E., Toronto, Ont.	
1. J. Irvine	Civil Engineer. Harriston, Ont.	
1. D. D. James, B.A., B.A.Sc.	Surveyor. 227 George St., Toronto.	
1. F. X. Mill (deceased).		
1. H. K. Moberley	District Engineer and Surveyor. Moosomin, Sask.	
1. T. R. Rosebrugh, M.A.....	Professor of Electrical Engineering, University of Toronto. Toronto, Ont.	
1. T. Wickett, M.D.....	Physician. 362 Cannon St. E., Hamilton, Ont.	

1890.

5. W. E. Boustead (deceased).	
1. F. M. Bowman, O.L.S., C.E.....	Structural Engineer, Pittsburgh, Pa. Riter-Conley Mfg. Co.
1. M. A. Bucke, M.E. (deceased).	
1. G. D. Corrigan (deceased).	
1. J. A. Duff, B.A. (deceased).	
1. A. B. English (deceased).	
1. N. L. Garland (deceased).	
1. J. Hutcheon, O.L.S.....	Engineer and Surveyor. Guelph, Ont.
1. W. L. Innes, O.L.S., C.E.....	Manager, Canadian Cannery, Ltd. Simcoe, Ont.
1. E. B. Merrill, B.A., B.A.Sc...	Consulting Engineer, M. Can. Soc. C.E. Lawlor Building. M. Am. Inst. E.E. Toronto, Ont.

1890—Continued.

Course.	Name and address.	Occupation.
1. J. R. Pedder (deceased).		
3. R. A. Ross, E.E.....	Ross & Holgate, Consulting Electrical 80 St. Francois Xavier St. and Mechanical Engineers. Montreal, P.Q.	
1. T. H. Wiggins, O.L.S.....	District Surveyor and Engineer, Saskatoon, Sask.	Dept. of Public Works.
1. W. J. Withrow.....	Patent Examiner, Patent Branch, Ottawa, Ont.	Dept of Agriculture.

1891.

1. H. J. Beatty, O.L.S.....	Engineer and Surveyor. Eganville, Ont.	
1. T. R. Deacon, O.L.S.....	President and General Manager, Winnipeg, Man.	Manitoba Iron Works, Ltd.
1. C. W. Dill.....	C. W. Dill & Co., Civil Engineers and A.M. Can. Soc. C.E., Toronto, Ont.	Contractors, 318 Continental Life Building.
5. O. S. James, B.A.Sc.....	Chemist for J. E. Wilkinson Co., Toronto, Ont.	Gold and Silver Refiners, 71 Lombard Street.
1. A. Lane (deceased).		
1. J. E. McAllister, B.A.Sc., C.E...	Manager British Columbia Copper Greenwood, B.C.	Co., Ltd.
3. E. B. Merrill, B.A., B.A.Sc....	Electrical Engineer, Power Dept. Winnipeg, Man.	
1. J. E. A. Moore, C.E.....	Consulting and Contracting Engineer. 10074 Kee Mar Court, Cleveland, O.	
1. W. Newman, O.L.S.....	Consulting Engineer. A.M. Can. Soc. C.E., Windsor, Ont.	
1. J. K. Robinson (deceased).		
1. W. B. Russel.....	Civil Engineer and Contractor. 318 Continental Life Bldg., Toronto, Ont.	
1. G. E. Silvester, O.L.S.....	Chief Engineer, Canadian Copper Co. Mem. Am. Inst. M.E., Copper Cliff, Ont.	
1. H. D. Symmes.....	Engineer and Contractor. Niagara Falls S., Ont.	

1892.

Course.	Name and address.	Occupation.
1. J. R. Allan, O.L.S.....	Ranchman. Macleod, Alta.	
1. T. H. Allison, B.A.Sc., C.E....	Chief Engineer, Augustus Smith Co. 149 Broadway, N.Y.	
1. A. G. Anderson.....	Hardware Merchant. Port Dover, Ont.	
1. C. Fairchild, D. & O.L.S.....	Surveying Staff, Dept. of Interior. Brantford, Ont.	
1. J. B. Goodwin, B.A.Sc.....	Resident Engineer of Construction, McCall's Ferry, Pa.	McCall's Ferry Power Co.
4. C. E. Langley.....	Langley & Howland, Architects. Continental Life Bldg., Toronto, Ont.	
1. A. T. Laing, B.A.Sc.....	Secretary, Faculty of Applied Science, Toronto, Ont.	University of Toronto.
1. E. J. Laschinger, B.A.Sc., M.E..	Mechanical Engineer, Estimating Johannesburg, Transvaal, S.A.	Branch, Consolidated Gold Fields.
5. W. L. Lawson, B.A.Sc.....	Manager, Great Western Sugar Co. Stirling, Col.	
3. W. A. Lee, B.A.Sc. (deceased).		
1. B. McEntee, B.A.Sc.....	28 Queen St. E., Toronto.	
3. C. G. Milne, B.A.Sc.....	Chief Engineer, Hamilton Bridge Hamilton, Ont.	Works Co.
1. Chas. H. Mitchell, B.A.Sc.	Consulting Hydro-electric Engineer, C.E., M. Can. Soc. C.E., M. Am. Soc. C.E.	Traders' Bank Bldg., Toronto.
1. N. L. Playfair.....	Supt. Playfair Lumber Co. Midland, Ont.	
1. J. M. Prentice (deceased).		
1. J. A. Ross.....	Designer L. S. & M. S. Railway, Cleveland, O.	Engineering Office.
1. Albert N. Smith.....	Engineer, Wm. B. Pollock Co. Youngstown, O.	
1. R. W. Thomson, B.A.Sc.....	Mining Engineer. Toronto, Ont.	
3. A. V. White, M.E.....	Mechanical Engineer. Toronto, Ont.	

1893.

Course.	Name and address.	Occupation.
1. A. G. Ardagh.....	Barrie, Ont.	
4.*H. F. Ballantyne, B.A.Sc.....	Architect. 244 Fifth Ave., New York, N.Y.	
1. G. L. Brown, O.L.S.....	Civil Engineer and Land Surveyor. A.M. Can. Soc. C.E., Morrisburg, Ont.	
1.*L. C. Charlesworth, D.L.S.....	Director of Surveys for Alberta. Edmonton, Alta.	
1. T. H. Dunn, O.L.S.....	Engineer and Surveyor. Winchester, Ont.	
1. J. M. R. Fairbairn, P.L.S.....	Assistant Engineer, C.P.R. Westmount, Que.	
4.*W. Fingland	Architect and Structural Engineer. 317 Portage Ave., Winnipeg, Man.	
1. C. Forrester	Toronto, Ont.	
1.*Walter J. Francis, C.E.....	Consulting Engineer, M. Can. Soc. C.E., Sovereign Bank Bldg. M. Am. Soc. C.E., Montreal, Que.	
3.*A. R. Goldie.....	Manager, Goldie & McCulloch Co. Galt, Ont.	
3. S. C. Hanly	Mechanical Engineer. Midland, Ont.	
4.*J. Keele, B.A.Sc.....	Geological Survey of Canada. Ottawa, Ont.	
1. J. T. Laidlaw, B.A.Sc., M.E....	Firm of Evans & Laidlaw, Mining Toronto, Ont. Engineers and Surveyors.	
3. F. L. Lash.....	Manager, Electrical Supply Co., Bandoeng, Java. Board of Trade Bldg.	
1. A. L. McAllister, B.A.Sc.....	Draftsman. 1314 Traders Bank Bldg., Toronto.	
1. T. J. McFarlen.....	Chemist. 153 Cumberland St. Toronto, Ont.	

*Diploma with honours.

1893—Continued.

Course.	Name and address.	Occupation.
1.*A. J. McPherson, B.A.Sc.....	Superintendent of Highways, D.L.S., Regina, Sask.	Province of Saskatchewan.
1. A. F. Macallum, B.A.Sc.....	Consulting Engineer, Toronto, Ont.	612 Continental Life Building.
1. W. T. Main.....	23 Wells St., Detroit, Mich.	
1. V. G. Marani.....	Consulting Engineer and Assistant Cleveland, Ohio.	Supt. of Cuyahoga County Bldgs.
1. W. Mines, B.A.Sc.....	With Brown Hoisting Co. Cleveland, Ohio.	
3.*J. M. Robertson.....	Supt., Repair and Testing Dept., Mon- Montreal, P.Q.	treal Light, Heat and Power Co.
1. R. Russell	Railway Contractor. Pembroke, Ont.	
1.*F. N. Speller, B.A.Sc.....	Metallurgical Engineer, National Pittsburgh, Pa.	Tube Co.
1. R. H. Squire, B.A.Sc., O.L.S... (Deceased.)		
1. W. V. Taylor, O.L.S.....	Dominion Engineering and Construc- A.M. Can. Soc. C.E., Montreal, P.Q.	tion Co.
1.*R. B. Watson.....	Dept. of Public Works. Regina, Sask.	

1894.

3.*R. W. Angus, B.A.Sc.....	Professor of Mechanical Engineering, Toronto, Ont.	University of Toronto.
1. H. F. Barker.....	Box 31, Halifax, N.S.	
1. A. T. Beauregard, B.A.Sc.....	Laboratory Engineer, Public Service East Orange, N.J.	Corporation of New Jersey.
1. A. E. Bergey.....	Carnegie Technical School. Pittsburgh, Pa.	
3. D. G. Boyd.....	Draftsman, Public Works Dept. Toronto, Ont.	
3. W. A. Bucke.....	With Canadian General Electric Co. Toronto, Ont.	
1. J. Chalmers, O.L.S.....	Structural Engineer, A.M. Can. Soc. C.E., Edmonton, Alta.	Dept. of Public Works.

*Diploma with honours.

1894—Continued.

Course.	Name and address.	Occupation.
4.*J. A. Ewart, B.A.Sc.....	193 Sparks St., Ottawa, Ont.	Architect and Engineer.
3. W. J. Herald, B.A.Sc.....	Hamilton, Ont.	With Dominion Iron & Steel Co.
3. H. E. Job, B.A.Sc.....	Hamilton, Ont.	Manager, Toronto & Hamilton Elec. Co.
3. A. C. Johnston, B.A.Sc., M.E....	Philadelphia, Pa.	Link Belt Engineering Co.
1. S. M. Johnston, B.A.Sc., P.L.S..	Greenwood, B.C.	City Engineer.
1. J. E. Jones	Pittsburgh, Pa.	Manager, M. H. Treadwell & Co., Engineers, Founders and Ma- chinists.
3. N. M. Lash.....	Montreal, P.Q.	Asst. Electrical Engineer, Bell Telephone Co.,
1.*A. L. McTaggart, B.A.Sc.....	Rockefeller Bldg., Cleveland, O.	Office of A. G. McKee, Consulting Engineer.
3.*W. Minty, B.A.Sc.....	Workington, Eng.	General Manager, Moss Bay Hema- tite, Iron and Steel Co., Ltd.
3. C. J. Nicholson.....	Hamilton, Ont.	Assistant Engineer, Hamilton, Guelph & Waterloo Ry.
1. H. Rolph	31 Burton Ave., Westmount, Que.	
1. J. D. Shields, B.A.Sc.....	Toronto, Ont.	Sewer Engineer, Staff of City Engineer.
3. A. K. Spotton.....	Galt, Ont.	Chief Engineer, Goldie & McCulloch Engine Works.
1. Angus Smith, O.L.S.....	A.M. Can. Soc. C.E., Regina, Sask.	City Engineer.
3. R. T. Wright, B.A.Sc.....	1315 Elm St., Wilkinsburg, Pa.	

1895.

Course.	Name and address.	Occupation.
1. J. Armstrong, B.A.Sc.....	District Engineer, G.T.P. Ry. Quebec, Que.	
3. A. E. Blackwood.....	Manager, New York Office, 42 Broadway, New York.	Sullivan Machinery Co.
1. E. J. Boswell, D.L.S.....	Winnipeg, Man.	
3. G. Brebner (deceased).		
3. W. M. Brodie, B.A.Sc.....	With the Green Engineering Co. of Pittsburgh, Pa.	Chicago.
3. L. L. Brown.....	Supt., The Foundation Co. 115 Broadway, New York.	
4. R. J. Campbell.....	Artist, Chicago Tribune. Chicago, Ill.	
3. A. W. Connor, B.A., C.E.....	Bowman & Connor, 36 Toronto St., Toronto, Ont.	Consulting Engineers.
1. J. S. Dobie, B.A.Sc., O. & D.L.S..	Thessalon, Ont.	
1. F. W. Guernsey.....	Engineer, Consolidated Mining and Trail, B.C.	Smelting Co.
4.*A. H. Harkness, B.A.Sc.....	Asst. Structural Engineer. Toronto, Ont.	Canada Foundry Co.
3. H. S. Hull, B.A.Sc.....	Structural Drawing, Johnstown, Pa.	Cambria Steel Co.
3.*J. McGowan, B.A., B.A.Sc....	Associate Professor of Applied Me- chanics, University of Toronto.	
3. W. N. McKay.....	Manager, Bank of Hamilton. Atwood, Ont.	
3. H. L. McKinnon, B.A.Sc.....	With the Brown Hoisting Machine Cleveland, O.	Co.
1. W. W. Meadows, D. & O.L.S...	Dept. of Public Works. Maple Creek, Sask.	
1. F. J. Robinson, D. & O.L.S....	Deputy Commissioner of Public Regina, Sask.	Works, Saskatchewan.
3. F. T. Stocking.....	Hydro-electric Commission. Toronto, Ont.	
3. R. C. C. Tremaine, B.A.Sc.....	(Deceased.)	

*Diploma with honours.

1896.

Course.	Name and address.	Occupation.
2.*J. W. Bain, B.A.Sc.....	Associate Professor of Applied Chem- Toronto, Ont.	istry, University of Toronto.
2. L. T. Burwash.....	Mining Recorder. Whitehorse, Y.T.	
3.*G. M. Campbell.....	Supt. Power Apparatus Shops, West- Riverside, Ill.	ern Electric Co.
2. J. A. Decew, B.A.Sc.....	Consulting Chemical Engineer. 14 Sun Life Building, Montreal, Que.	
3.*H. P. Elliott, B.A.Sc., M.E. ..	Electrical Engineer, Westinghouse Pittsburgh, Pa.	Electric and Mfg. Co.
3. W. C. Gurney.....	Vice-President, Gurney Foundry Co., Toronto, Ont.	Limited.
3.*H. V. Haight, B.A.Sc.....	Chief Engineer, Canadian Rand Drill Sherbrooke, P.Q.	Co.
1. W. F. Laing (deceased).		
3. R. R. Lawrie (deceased).		
3. C. MacBeth, B.A.Sc. (deceased).		
3. J. A. McMurchy.....	Mechanical Engineer. Pittsburgh, Pa.	Westinghouse Machine Co.
1. T. Martin, B.A.Sc.....	Asst. Divisional Engineer, C.P.R., Calgary, Alta.	Western Division.
3. R. R. Scheibe.....	With Toronto Engraving Co., Ltd. Toronto, Ont.	

1897.

2. E. Andrews, B.Sc.....	Res. Engineer. A.M.I. C.E., Portmadoc, N. Wales.	Maenofferen Slate Quarry Co., Limited.
2.*J. A. Bow.....	B. & M. Smelter. Great Falls, Mon.	
1. H. S. Carpenter, B.A.Sc., O.L.S.	District Surveyor & Engineer, Regina, Sask.	Department of Public Works.
5. H. W. Charlton, B.A.Sc.....	Assistant Chemist at Experimental Ottawa, Ont.	Farm.
4.*E. A. Forward.....	Engineer-in-charge, A.M. Can. Soc. C.E., Lockport, Man.	St. Andrew's Lock and Dam.

*Diploma with honours.

1897—*Continued.*

Course.	Name and address.	Occupation.
3.*A. T. Gray, B.A.Sc.....	With General Electric Co. Schenectady, N.Y.	
3. W. A. B. Hicks.....	With Lackawanna Steel Co. Buffalo, N.Y.	
4. C. F. King.....	Rep. of Mortimer Co. of Ottawa. Toronto, Ont.	
1. H. W. Proudfoot (deceased).		
2.*A. H. A. Robinson, B.A.Sc.....	Mining Inspector. Haileybury, Ont.	
4. W. F. Scott.....	Structural Engineer and Consulting Toronto, Ont. Architect.	
3.*W. R. Smiley, B.A.Sc.....	With Wellman-Seaver-Morgan En- Cleveland, Ohio gineering Co.	
2.*W. W. Stull, B.A.Sc., O.L.S...	Surveyor and Mining Engineer. Sudbury, Ont.	
1.*M. B. Weekes, B.A.Sc., D.L.S...	Dept. of Public Works. Regina, Sask.	
1. E. A. Weldon.....	Provincial Land Surveyor's Office. Winnipeg, Man.	

1898.

1. W. H. Boyd, B.A.Sc.....	Geological Survey of Canada. Ottawa, Ont.	
2. W. E. H. Carter, B.A.Sc.....	E. T. Carter & Co., Toronto, Ont. 83 & 85 Front Street East.	
3. E. H. Darling.....	With Hamilton Bridge Works Co. A.M. Can. Soc. C.E., Hamilton, Ont.	
1. W. F. Grant, B.A.Sc.....	City Engineer. Sault Ste. Marie, Ont.	
1. J. S. Kormann, B.A.Sc.....	Manager, Kormann Brewing, Ltd. Toronto, Ont.	
3. J. E. Lavrock.....	Draftsman, Hermon & Burwell. Vancouver, B.C.	
4. D. Macintosh, B.A.Sc., B. Arch.	Firm of F. M. Andrews & Co., New York, N.Y. Waldorf Astoria.	
1. F. W. McNaughton, O.L.S.....	Deputy Minister of Public Works. Winnipeg, Man.	
1. J. H. Shaw, O.L.S.....	Surveyor and Engineer. North Bay, Ont.	

*Diploma with honours.

1898—Continued.

Course.	Name and address.	Occupation.
3. A. E. Shipley, B.A.Sc.....	Manager, Nelson Coke & Gas Co. Nelson, B.C.	
3.*F. C. Smallpiece, B.A.Sc.....	With Canadian General Electric Co. Toronto, Ont.	
1. R. W. Smith, P.L.S.....	Surveyor. Revelstoke, B.C.	
1.*J. A. Stewart, M.A.....	Consulting Engineer. Hamilton, Ont.	
1.*H. L. Vercoe.....	Chief Draftsman, Montreal, Que.	Grand Trunk Pacific Ry.
3. T. A. Wilkinson.....	Assistant Statistician, Westinghouse New York, N.Y.	Church Kerr Co.
3. D. A. Williamson, B.A.Sc.....	With Hamilton Bridge Works Co. Hamilton, Ont.	

1899.

3.*T. Barber	Hydraulic Engineer, Meaford, Ont.	Chas. Barber & Sons.
2. J. T. M. Burnside, B.A.Sc.....	Chief of Location, Canton, China.	Canton Hankow Ry.
3. L. B. Chubbuck, B.A.Sc.....	Engineering Dept., Westinghouse Wilksburg, Pa.	Electric and Mfg. Co.
2. G. A. Clothier	Engineer, Le Roy Mining Co. Rossland, B.C.	
1. C. Cooper.	Surveyor. Carlyle, Sask.	
2. R. W. Coulthard, B.A.Sc.....	Mining Engineer. Toronto, Ont.	
3. J. A. Craig, B.A.Sc.....	Office of Willis Chipman, C.E. Toronto, Ont.	
2. J. C. Elliott.....	Kelso, Ont.	
3. W. E. Foreman, B.A.Sc.....	Construction Dept., Westinghouse Pittsburgh, Pa.	Electric and Mfg. Co.
3. E. Guy, B.A.Sc.....	Engineering Dept., Westinghouse Industry, Pa.	Electric and Mfg. Co.
3.*W. Almon Hare, B.A.Sc.....	Secy.-Treas. and Chief Engineer, A.M. Can. Soc. C.E., Toronto, Ont.	The Standard Engineering Co.

*Diploma with honours.

1899—Continued.

Course.	Name and address.	Occupation.
1. R. Latham, B.A.Sc.....	Asst. Engineer, T. H. & B. Ry. Hamilton, Ont.	
3. W. Monds, B.A.Sc.....	Clark & Monds, 36 Toronto St., Toronto, Ont.	Consulting Engineers.
3. A. S. H. Pope, B.A.Sc.....	Pope & Wilcox, Portland, Oregon.	Elec. & Mech. Engineers.
1. J. Patterson, B.A.	Meteorological Service. Simla, India.	
2.*G. E. Revell, B.A.Sc.....	Nelson, B.C.	
3.*E. Richards, B.A.Sc.....	Asst. Electrical Engineer, Toronto, Ont.	City of Toronto.
3. G. A. Saunders.....	With Westinghouse Electric & Mfg. Wilkesburg, Pa.	Co.
1.*T. Shanks, B.A.Sc., D.L.S.....	Topographical Surveys Branch, Ottawa, Ont.	Dept. of the Interior.
1.*D. C. Tennant, B.A.Sc.	With Dominion Bridge Co. Lachine Locks, P.Q.	
3. W. W. VanEvery.....	Consulting Engineer. Peterboro, Ont.	
2. G. H. Watt, D.L.S.....	Dominion Land Surveyor. Ottawa, Ont.	
3. W. E. Wagner, B.A.Sc.....	Constructing Engineer, East Alton, Ill.	Equitable Powder Mfg. Co.
3. E. Yeates	Manager, London Machine Tool Co., Hamilton, Ont.	Ltd.

1900.

1. J. L. Allan.....	Office of Provincial Engineer. A.M. Can. Soc. C.E., Halifax, N.S.	
2. E. G. R. Ardagh, B.A. Sc.....	Lecturer in Applied Chemistry, Toronto, Ont.	University of Toronto.
3. J. A. Bain.....	Structural Engineer, Dept. of Public Ottawa, Ont.	Works of Canada.
3. J. H. Barley, B.A.Sc.....	Canadian Westinghouse Co. Hamilton, Ont.	

*Diploma with honours.

1900—Continued.

Course.	Name and address.	Occupation.
2.*M. C. Boswell, M.A., Ph.D.....	Lecturer in Organic Chemistry, Toronto, Ont.	University of Toronto.
1. L. T. Bray, D. & O.L.S.....	Dist. Engineer & Surveyor. Edmonton, Alta.	
3. J. Clark	Electrician, Pittsburgh, Pa.	P. & L. E. R. R.
2. J. E. Davison, B.A.Sc.....	Engineering Staff, Can. Northern Ry. Toronto, Ont.	
3. E. D. Dickinson.....	With General Electric Co. Schenectady, N.Y.	
3. G. W. Dickson, B.A.Sc.....	With Smith, Kerry & Chace. Toronto, Ont.	
2.*H. A. Dixon, B.A.Sc., M.L.S...	Engineering Staff, Winnipeg, Man.	Canadian Northern Ry.
2. C. H. Fullerton, O.L.S.....	Engineer and Surveyor. New Liskeard, Ont.	
3. W. S. Guest, B.A.Sc.....	Demonstrator in Electrical Engineer- ing, University of Toronto.	
3. W. Hemphill, B.A.Sc.....	General Foreman, Cataract Power & 718 Fidelity Building, Buffalo, N.Y.	Conduit Co.
3. S. E. M. Henderson.....	Designing Engineer, Schenectady, N.Y.	General Electric Co.
3. J. A. Henry.....	Designing Engineer, Schenectady, N.Y.	General Electric Co.
2. H. S. Holcroft, B.A.Sc., D.L.S.	Surveyor Peace River Dist.	
3. H. A. Johnston.....	Manager, Johnston Oil Engine Co., 148 Clinton St. Toronto, Ont.	Limited.
3. J. C. Johnston.....	Plant Inspector, Boston, Mass.	Warren Bituminous Paving Co.
2.*J. A. Johnston, B.A.Sc.....	Contractor. Ignace, Ont. .	
2. R. E. McArthur.....	Resident Engineer, C.P.R. Calgary, Alta.	
2. J. G. McMillan, B.A.Sc.....	Mining Engineer. 39 Wood St., Toronto, Ont.	

*Diploma with honours.

1900—Continued.

Course.	Name and address.	Occupation.
3. L. Hanu Miller.....	Interstate Engineering Co. Cleveland, O.	
2. E. V. Needlands, B.A.Sc.....	Hargrave Mines. Cobalt, Ont.	
1.*E. H. Phillips, D.L.S.....	Dept. of Public Works. Saskatoon, Sask.	
2. J. R. Roaf, B.A.Sc.....	Draftsman, Crow's Nest Pass Coal Co. Michel, B.C.	
3.*C. H. E. Rounthwaite.....	Draftsman, G.T.P. Ry. Fort William, Ont.	
2. H. W. Saunders, B.A.Sc.....	Chief Draftsman, Gary, W. Va.	U.S. Coal & Coke Co.
1. A. Taylor, D.L.S. & M.L.S.....	Engineer and Surveyor. Winnipeg, Man.	
1. W. C. Tennant, B.A.Sc.....	(Deceased.)	
2. S. M. Thorne, B.A.Sc.....	Engineering Staff, Cobalt, Ont.	Silver Leaf Mine.
1. F. W. Thorold, B.A.Sc.....	Assistant City Engineer on Const. of Toronto, Ont.	Sewage System.
1. H. M. Weir, B.A.Sc.....	With Real Del Morte Co. Pachuca, Mex.	
3. F. D. Withrow.....	Patent Examiner, Ottawa, Ont.	Dept. of Agriculture.

1901.

1. R. H. Barrett, B.A.Sc., O.L.S...	(Deceased.)	
3. W. G. Beatty	Manager, Beatty Bros., Implement Fergus, Ont.	Manufacturers.
3. G. M. Bertram.....	Representative of the Sullivan Ma- chinery Co.	Joplin, Mo.
3. W. J. Bowers (deceased).		
3. E. T. J. Brandon, B.A.Sc.....	Designing Engineer, Toronto, Ont.	Hydro-Electric Power Comm.
3. W. P. Brereton, B.A.Sc.....	Asst. Engineer, Winnipeg, Man.	Power Construction Dept.
3. J. T. Broughton.....	Chief Engineer, Scottsdale, Pa.	Scottsdale Foundry & Machine Co.

*Diploma with honours.

1901—Continued.

Course.	Name and address.	Occupation.
3.*W. G. Chace, B.A.Sc.....	Firm of Smith, Kerry & Chace. Carnegie Library, Winnipeg, Man.	
3. A. G. Christie.....	Laboratory Research Asst., 1713 Munro St., Madison, Wis.	University of Wisconsin.
3. J. R. Cockburn, B.A.Sc.	Lecturer in Descriptive Geometry, Toronto, Ont.	University of Toronto.
1. W. A. Duff.....	Chief Draftsman, Bridge Dept., Ottawa, Ont.	National Transcontinental Ry.
2.*D. E. Eason, B.A.Sc.....	Division Engineer, Peterboro, Ont.	Trent Valley Canal.
1.*S. Gagné, B.A.Sc.....	Engineer-in-Charge, Toronto and A.M. Can. Soc. C.E., 1511 Traders Bank Bldg., Toronto, Ont.	Niagara Power Co., Toronto, Niagara & Western Ry., etc.
3. N. R. Gibson, B.A.Sc.....	Asst. Engineer, Winnipeg, Man.	Power Const. Dept.
1. C. Harvey, B.A.Sc., D.L.S.....	Consulting Engineer and Surveyor. Kelowna, B.C.	
2. A. T. E. Hamer.....	Engineering Staff, Wahnapitae, Ont.	Canadian Northern Ry. Co.
2. F. C. Jackson.....	Jackson & Connolly, contractors, La Tuque, P.Q.	National Trans. Ry.
3.*A. Laidlaw	District Manager, Trussed Concrete Kansas City, Mo.	Steel Co.
3. W. C. Lumbers.....	Engineering Staff, C.P.R. Calgary, Alta.	
3. A. C. Macdougall.....	Asst. Superintendent, Massena, N.Y.	Aluminium Co. of America.
3. A. T. C. McMaster, B.A.Sc.....	742 Spadina Ave., Toronto, Ont.	
1. G. MacMillan	Topographical Surveys Branch, Ottawa, Ont.	Dept. of Interior.
3.*H. G. McVean, B.A.Sc.....	Engineering Staff of W. Chipman, Prince Albert, Sask.	C.E.
2. W. C. Matheson.....	With McKenzie, Mann Co. Joliette, P.Q.	
3. H. T. Middleton.....	Englewood Cliffs, N.J.	

*Diploma with honours.

1901—Continued.

Course.	Name and address.	Occupation.
2.	J. L. R. Parsons, B.A., D.L.S....	Engineer and Surveyor. Winnipeg, Man.
1.	G. H. Power.....	Western Canada Rep. of Willis Saskatoon, Sask. Chipman, C.E.
3.*	H. W. Price, B.A.Sc.....	Lecturer in Electrical Engineering, Toronto, Ont. University of Toronto.
1.	H. P. Rust, B.A.Sc.....	With Messrs. Vielé, Blackwell & A.M. Can. Soc. C.E., Buck. New York, N.Y.
3.	M. V. Sauer, B.A.Sc.....	Assistant Engineer, Niagara Falls, Ont. Ontario Power Co.
3.	W. H. Stevenson, B.A.Sc.....	Secretary, Power Plant Specialty Co. Monadnock Block, Chicago, Ill.
1.	R. D. Willson.....	Asst. City Engineer. Winnipeg, Man.

1902.

3.*	H. G. Barber.....	Topographical Surveys Branch, Ottawa, Ont. Department of the Interior.
1.	W. J. Blair, B.A.Sc., D. & O.L.S.	Civil Engineer and Surveyor. New Liskeard, Ont.
3.	J. M. Brown.....	With Westinghouse Machine Co., Pittsburgh, Pa. Steam Turbine Dept.
2.	W. G. Campbell.....	Toronto, Ont.
2.	A. R. Campbell.....	Universal Mfg. Co., Ltd., Toronto, Ont. St. James Chambers.
3.	C. G. Carmichael (deceased).	1874
2.*	W. Christie, B.A.Sc.....	Asst. to H. W. Selby, D.L.S. Markerville, Alta.
2.	F. T. Conlon.....	Welland Canal Engineering Staff. Thorold, Ont.
3.	H. V. Connor.....	With Westinghouse Electric and Mfg. Pittsburgh, Pa. Co.
2.*	M. T. Culbert.....	Manager, O'Brien Mine. Cobalt, Ont.
2.	R. Cumming	General Contractor, Toronto, Ont. 50 Front St. E.
1.	W. E. Douglas, B.A.....	Secy.-Treas., J. H. McKnight Con- struction Co. Toronto, Ont.

*Diploma with honours.

1902—Continued.

Course.	Name and address.	Occupation.
3.*R. J. Dunlop.....	With Canadian Westinghouse Co. Toronto, Ont.	
2. W. M. Edwards, B.A.Sc.....	1510 5th St. West, Calgary, Alta.	
3. W. Elwell	Topographical Surveys Branch, Ottawa, Ont.	Department of the Interior.
2. J. M. Empey, B.A.Sc., D.L.S....	Dist. Engineer and Surveyor. Calgary, Alta.	
2.*D. L. H. Forbes	Los Angeles, Cal.	
1.*A. E. Gibson, B.A.Sc.....	Office of Haney & Miller, Toronto, Ont.	Engineers and Contractors.
3. A. C. Goodwin.....	Draftsman, Pittsburgh, Pa.	Aluminium Co. of America.
3. C. P. Henwood.....	Draftsman, McKeesport, Pa.	National Tube Co.
3. D. M. Johnston.....	Supt. & Electrical Engineer, Toronto, Ont.	Jones & Moore Electrical Co.
2. R. H. Knight, B.A.Sc., D.L.S....	Driscoll & Knight, Edmonton, Alta.	Engineers and Surveyors.
5.*F. L. Langmuir, B.A.Sc., Ph.D.	Chemist, M. Langmuir Mfg. Co. Toronto, Ont.	
3. A. H. McBride, B.A.Sc.....	Assistant Engineer, Hydro- Toronto, Ont.	Electric Power Commission.
1. A. L. McLennan, D.L.S.....	Office & York Co. Engineer. Toronto, Ont.	
3. J. T. Mackay	Student in Faculty of Medicine, Toronto, Ont.	University of Toronto.
3. J. F. S. Madden.....	Erecting Engineering Dept., Toronto, Ont.	Can. Gen. Electric Co.
3* C. H. Marrs.....	Designing Dept., Pittsburgh, Pa.	Riter-Conley Mfg. Co.
3. P. Mathison, B.A.Sc.....	Electrical Eng., Canadian Westinghouse Hamilton, Ont.	Co.
3. R. S. Mennie.....	With Crucible Steel Co. of America. Pittsburgh, Pa.	
2. H. H. Moore, D.L.S.....	Dominion Land Surveyor and En- Calgary, Alta.	gineer.

*Diploma with honours.

1902—Continued.

Course.	Name and address.	Occupation.
1.*T. S. Nash.....	Topographical Surveys Branch, Ottawa, Ont.	Department of the Interior.
1. G. G. Powell, B.A.Sc.....	Asst. City Engineer Roadways Toronto, Ont.	Dept.
1.*W. F. Ratz, D.L.S. (deceased).		
3. H. D. Robertson, B.A.Sc.....	Cumming & Robertson. Toronto, Ont.	Engineers and Contractors.
3.*D. Sinclair, B.A.Sc. (deceased).		
2.*I. J. Steele, D.L.S.....	Boxall, Ont.	
3. W. H. Sutherland, B.A.Sc.....	Westmount, Que.	
3.*T. F. Taylor	Fellow in Drawing, Toronto, Ont.	University of Toronto.
2.*C. M. Teasdale.....	Surveyor. Concord, Ont.	
3. A. A. Wanless.....	Shop Supt., Nova Scotia Steel and Sydney Mines, N.S.	Coal Co.
3. H. J. Zahn, B.A.Sc.....	With Bollinger Bros., Pittsburgh, Pa.	Contracting Engineers.

1903.

3. H. G. Acres.....	Asst. Engineer, Hydro-Electric Toronto, Ont.	Power Commission.
1. J. G. R. Alison.....	With Riter-Conley Mfg. Co. Pittsburgh, Pa.	
3.*H. H. Angus, B.A.Sc.....	With Westinghouse Machine Co. Riverside, Ill.	
3. J. A. Beatty.....	Morrow & Beatty, Contractors. Peterboro, Ont.	
3.*J. Breslove	Steam Turbine Engineer, Westing- East Pittsburgh, Pa.	house Machine Co.
2. J. H. Burd, O.L.S.....	Engineer and Surveyor. Sudbury, Ont.	
1.*E. L. Burgess, D.L.S.....	Topographical Surveys Branch, Ottawa, Ont.	Department of the Interior.

*Diploma with honours.

1903—Continued.

Course.	Name and address.	Occupation.
2. N. A. Burwash, B.A.Sc.....	Whitehorse, Y.T.	Surveyor.
1. F. F. Clarke, D. & O.L.S.....	Toronto, Ont.	With Can. Northern Ry.
2. C. L. Coulson.....	Welland, Ont.	
3.*A. E. Davison, B.A.Sc.	Toronto, Ont.	Engineering Staff, Hydro-Electric Power Comm.
3. C. J. Fensom, B.A.Sc.	Toronto, Ont.	Consulting Mechanical Engineer, 43 Victoria St.
2.*E. O. Fuce, O.L.S.....	Galt, Ont.	Resident Engineer, Galt Sewerage System.
3.*F. A. Gaby, B.A.Sc.....	Toronto, Ont.	Chief Asst. Engineer, Hydro-Electric Power Commission.
3. R. E. George.....	Dover, N.H.	Electrical and Gas Engineer, The United Gas & Electric Co.
1. J. C. Gardner, B.A.Sc.....	Niagara Falls, Ont.	Gardner & Wilson.
1.*P. Gillespie, B.A.Sc.....	Toronto, Ont.	Lecturer in Theory of Construction, University of Toronto.
1. W. A. Gourlay.....	Toronto, Ont.	Engineering Staff, C.P.R.
2. J. F. Hamilton, B.A.Sc., C.E....	Lethbridge, Alta.	Hamilton & Young, Dominion Land Surveyors and Engineers.
2. G. S. Hanes, B.A.Sc., O.L.S....	North Vancouver, B.C.	City Engineer.
2. F. Y. Harcourt, B.A.....	Niagara Falls, Ont.	Ontario Niagara Falls Power Co.
1. L. J. Hayes.....	Chicago, Ill.	Structural Engineer, Corn Products Refining Co.
1.*F. D. Henderson.....	Ottawa, Ont.	Topographical Surveys Branch, Department of the Interior.
5.*J. A. Horton.....		
3. J. G. Jackson.....	Toronto, Ont.	Electrical Dept., City Hall.
3. C. K. Johnston	Pefferlaw, Ont.	Merchant.

*Diploma with honours.

1903—Continued.

Course.	Name and address.	Occupation.
1. H. Johnston, O.L.S.....	Davis & Johnston, Berlin, Ont.	Civil Engineers and Surveyors.
3. A. G. Lang.....	Electrical Dept., Toronto, Ont.	City Hall.
1.*A. J. Latornell, B.A.Sc.....	Edmonton, Alta.	
1.*H. J. McAuslan, B.A.Sc., O.L.S.	Staff of T. & N. O. Ry. North Bay, Ont.	
3. J. A. McFarlane, B.A.Sc.....	Hamilton Bridge Works Co. Hamilton, Ont.	
1.*A. L. McNaughton.....	With G.T.P. Co. Prince Rupert, B.C.	
5.*F. G. Marriott, B.A.Sc.....	Chemist and Supt., Asphalt Plant, Toronto, Ont.	City Testing Laboratory.
3.*C. A. Maus.....	Paris, Ont.	
3.*M. L. Miller.....	Draftsman, McClintic-Marshall Con- struction Co. Pottstown, Pa.	
3. P. H. Mitchell.....	Consulting Electrical Engineer, Toronto, Ont.	Traders' Bank Bldg.
2.*R. H. Montgomery, B.A.Sc.,	Engineer and Surveyor. O.L.S., D.L.S. Prince Albert, Sask.	
1. F. A. Moore	Toronto, Ont.	
3. E. E. Mullins.....	Baldwin Locomotive Works. Philadelphia, Pa.	
3. I. H. Nevitt, B.A.Sc.....	Construction, Bell Telephone Co. Toronto, Ont.	
1. E. W. Oliver, B.A.Sc.....	Asst. to Chief Engineer Eastern Lines, Toronto, Ont.	Mackenzie, Mann Ry. System.
3. J. P. Oliver.....	Supt. of Construction, The American Arabi, La.	Sugar Refining Co.
3. J. D. Pace, B.A.Sc.....	Construction Engineer, Montreal, Que.	Canadian Westinghouse Co.
3. B. B. Patten, B.A.Sc.....	St. George, Ont.	
2. D. H. Philp.....	Georgian Bay Canal Survey. Ottawa, Ont.	
3.*D. H. Pinkney	National Tube Dept., Elyria, O.	U.S. Steel Corporation.

*Diploma with honours.

1903—Continued.

Course.	Name and address.	Occupation.
2. T. H. Plunkett, B.A.Sc.....	Toronto, Ont.	
1.*H. L. Seymour.....	Edmonton, Alta.	Dominion Land Surveyor.
3.*H. M. Scheibe, B.A.Sc.....	Pittsburgh, Pa.	Student apprentice, Westinghouse Electric & Mfg. Co.
1. J. H. Smith, D. & O.L.S.....	New Liskeard, Ont.	Engineer & Surveyor.
3. H. G. Smith, B.A.Sc.....		(Deceased.)
3. S. L. Trees, B.A.Sc.....	Toronto, Ont.	Supt. Mfg. Dept., Samuel Trees & Co., 42 Wellington St. East.
2. J. E. Umbach.....	Ottawa, Ont.	Topographical Surveys Branch, Department of the Interior.
1. J. Waldron, D.L.S.....	Moose Jaw, Sask.	Engineer and Surveyor.
3.*S. B. Wass.....	Toronto, Ont.	Construction Dept., C.P.R.
3. J. A. Whelihan.....	Regina, Sask.	
3. H. F. White.....	London, Ont.	
2.*C. G. Williams, B.A.Sc.....	Cobalt, Ont.	
1.*N. D. Wilson, B.A.Sc.....	Niagara Falls, Ont.	Gardner & Wilson.
1.*C. R. Young, B.A.Sc.....	Toronto, Ont.	Lecturer in Applied Mechanics, University of Toronto.

1904.

3.*J. H. Alexander, B.A.....	Youngstown, Ohio.	
3.*J. H. Barrett.....	Toronto, Ont.	With the Wm. Davies Co., Ltd.
3. M. B. Bonnell.....	Bobcaygeon, Ont.	
3. T. D. Brown, B.A.Sc.....	Barrie, Ont.	
3. F. W. Burnham, B.A.Sc.....	Milwaukee, Wis.	Steam & Electrical Dept. Allis-Chalmers-Bullock Co.

*Diploma with honours.

1904—*Continued.*

Course.	Name and address.	Occupation.
3. J. W. Calder, B.A.Sc.....	With Deloro Mining & Reduction Co. Deloro Mines, Ont.	
1. A. J. Campbell, B.A.Sc.....	Toronto, Ont.	
1. N. C. Cameron.....	Dominion Engineering and Construc- 4172 Dorchester St., tion Co. Montreal, Que.	
3.*A. M. Campbell, B.A.Sc.....	1403 King St. W., Toronto, Ont.	
4. J. B. Challies.....	Hydraulic Engineer, Ottawa, Ont.	Department of the Interior.
2. C. A. Chilver.....	Walkerton, Ont.	
2. H. L. Chilver.....	Moosehorn Bay, Man.	
1. U. W. Christie, B.A.Sc., O.L.S.	Dominion Astronomer's Office. Ottawa, Ont.	
2. P. C. Coates, B.A.Sc.....	Mining Engineer. Cobalt, Ont.	
1. S. B. Code.....	Town Engineer. Smith's Falls, Ont.	
1.*T. F. Code, B.A.Sc (deceased).		
1.*W. A. Cowan.....	Resident Engineer, C.P.R. West Toronto, Ont.	
3.*S. E. Craig.....	With Manson Mfg. Co. Thorold, Ont.	
1.*S. R. Crerar, B.A.Sc., O.L.S...	Demonstrator in Surveying, Toronto, Ont.	University of Toronto.
3. W. M. Currie.....	Chief Inspector and Engineer, Hamilton, Ont.	Hamilton Steel and Iron Co.
3. H. H. Depew.....	Supt., Crow's Nest Pass Electric Ferne, B.C.	Light and Power Co.
2. A. J. Elder.....	Topographical Surveys Branch, Ottawa, Ont.	Department of the Interior.
2. J. G. Fleck.....	Lumber Merchant. Madawaska, Ont.	
1.*A. L. Ford, B.A.Sc.....	Civil Engineer. Winnipeg, Man.	

*Diploma with honours.

1904—Continued.

Course.	Name and address.	Occupation.
3.	W. S. Gibson, B.A.Sc..... 381 Park Rd. Toronto, Ont.	
1.	J. P. Gordon.....	Engineering Staff, Willis Chipman, Toronto, Ont. C.E.
3.	W. W. Gray, B.A.Sc.....	Demonstrator in Thermodynamics, Toronto, Ont. University of Toronto.
1.	A. Gray, B.A.Sc.....	With St. Lawrence Starch Co. Port Credit, Ont.
3.	W. K. Greenwood, B.A.Sc.....	Draftsman, Welland Canal Office. St. Catharines, Ont.
1.	L. D. Hara	Asst. Engineer, Welland Canal Co. St. Catharines, Ont.
3.	C. J. Harris, B.A.Sc.....	With Brantford Screw Co. Brantford, Ont.
1.	J. B. Heron, B.A.Sc.....	Resident Engineer, Toronto, Ont. Can. Northern Ry.
1.	E. M. M. Hill.....	Engineering Dept. Winnipeg, Man. Canadian Northern Railway.
2.	S. N. Hill.....	Topographical Surveys Branch, Ottawa, Ont. Department of the Interior.
2.	C. J. Ingles.....	Welland Canal Office. St. Catharines, Ont.
1.	E. A. James, B.A.Sc.....	Editorial Staff, Canadian Engineer. Toronto, Ont.
1.	P.V. Jermyn, B.A.Sc.....	C.P.R. Construction Dept. 118 King St. West, Toronto, Ont.
3.	W. S. H. Keefe.....	Manager, Light, Heat and Power Co. Fort Covington, N.Y.
3.	W. J. Larkworthy.....	Mitchell, Ont.
3.	O. B. McCuaig, B.A.Sc.	Wyse & Middlemist, Toronto, Ont. 43 Janes Building.
1.	G. G. McEwen, B.A.Sc.....	Office of T. H. Dunn, O.L.S. Winchester, Ont.
1.*	W. G. McFarlane, B.A., B.A.Sc.	Engineer and Surveyor. Peace River Dist.
3.*	C. P. McGibbon, B.A.....	With Westinghouse Electric and Mfg. East Pittsburgh, Pa. Co.
3.	C. McKay, B.A.Sc. (deceased).	

*Diploma with honours.

1. D. McMillan
Woodville, Ont.
3. G. J. Manson.....With Manson Mfg. Co., Ltd.
Thorold, Ont.
- 1.*W. N. Moorhouse.....Office of Sproatt & Rolph, Architects.
Toronto, Ont.
3. E. E. Moore.....Engineer, Inter-State Iron Co.
Glen Falls, N.Y.
3. W. H. Munro.....McDougall & McRae.
Ottawa, Ont.
3. G. Pace, B.A.Sc.....With Canadian Westinghouse Co.
Hamilton, Ont.
3. W. S. Pardoe, B.A.Sc.....Fellow in Hydraulics,
Toronto, Ont. University of Toronto.
3. J. ParisResident Engineer,
La Tuque, Que. Trans. Ry.
2. J. Parke, B.A.Sc.....Chemist and Assayer.
Thessalon, Ont.
3. W. J. Peaker.....Top. Surveys Branch,
Ottawa, Ont. Dept. of Interior.
- 3.*A. E. Pickering.....Draftsman, Lake Superior Power Co.
Sault Ste. Marie, Ont.
1. D. L. C. Raymond, B.A.Sc.....Manager, The Concrete Engineering
Toronto, Ont. and Construction Co., Ltd.
1. F. B. Reid, B.A.Sc.....Astronomical Surveys Branch, Dept.
Ottawa, Ont. of the Interior.
- 3.*M. R. Riddell, B.A.Sc.....Lecturer in Mechanical Engineering
Toronto, Ont. University of Toronto.
3. G. S. Roxburgh, B.A.Sc.....Manager, Fetherstonhaugh & Co.,
Winnipeg, Man. Patent Solicitors and Engineers.
2. F. N. Rutherford, B.A.Sc.....General Manager, Concrete Pole Co.
St. Catharines, Ont.
- 1.*J. D. Sheply, B.A.Sc., D.L.S...Dist. Surveyor and Engineer.
N. Battleford, Sask.
3. F. W. Slater, B.A.Sc.....With General Electric Co.
Schenectady, N.Y.
- 3.*R. S. Smart.....Manager, Fetherstonhaugh & Co.,
Ottawa, Ont. Patent Solicitors and Engineers.
1. D. A. Smith, B.A.Sc.....
Claude, Ont.
3. W. J. Smither, B.A.Sc.....Manager, Seattle Office of Abner
Seattle, Wash. Doble Co.

*Diploma with honours.

1904—Continued.

Course.	Name and address.	Occupation.
3. S. E. Thomson, B.A.Sc.....	Engineering Staff, Niagara Falls, Ont.	Electrical Development Co.
3. C. J. Townsend, B.A.Sc.	Toronto, Ont.	
1. D. T. Townsend, B.A.Sc., O.L.S.C.P.R.	Land Department, Winnipeg, Man.	
1. A. V. Trimble, B.A.Sc.....	Hydro-Electro Power Commission, Toronto, Ont.	
3. B. B. Tucker, B.A.Sc.....	Resident Engineer of The Canada Tin Morrisburg, Ont.	Plate and Sheet Steel Co., Ltd.
2.*E. Wade, B.A.....	Demonstrator in Mining, Toronto, Ont.	University of Toronto.
1.*E. W. Walker, B.A.Sc.	Dept. of Public Works, Regina, Sask.	
3. J. P. Watson, B.A.Sc.....	Draftsman, Motive Power Dept., Montreal, Que.	C.P. Ry.
1. J. M. Weir.....	Engineering Staff, G.T. Ry. Hamilton, Ont.	
1.*A. F. Wells, O.L.S., B.A.Sc....	Engineering Dept., Toronto, Ont.	Trussed Concrete Steel Co.
1. W. R. Worthington, B.A.Sc...	Asst. Sewer Engineer, Toronto, Ont.	Staff of City Engineer.
3. W. F. Wright.....	District Engineer, Denver, Colo.	General Electric Co.

1905.

2. H. W. Arens (deceased).		
3. R. H. Armour.....	Westinghouse Electric & Mfg. Co. 165 Broadway, New York.	
3.*C. B. Aylesworth	Canadian Westinghouse Co. Hamilton, Ont.	
1.*W. Barber, B.A.Sc.....	Roadways Dept., Toronto, Ont.	City Hall.
2.*W. A. Begg, B.A.Sc.....	Hamilton, Ont.	
3.*G. G. Bell.....	Toronto, Ont.	
1. J. C. Boeckh.....	With Boeckh Bruss Co. Toronto, Ont.	

1905—Continued.

Course.	Name and address.	Occupation.
3.	W. M. Bristol.....	Canadian Westinghouse Co. Montreal, Que.
2.	W. C. Campbell.....	Mining Engineer. Keene, Ont.
3.	W. R. Carson	Power and Plant Engineer, Taylor High Bridge, N.J. Iron and Steel Co.
1.	A. V. Chase.....	Smith's Falls, Ont.
3.	S. R. A. Clement.....	With General Electric Co. Schenectady, N.Y.
3.	T. E. Corrigan.....	Reno, Nevada.
1.*	N. L. R. Crosby, B.A.Sc.....	Estimating Dept., Wilkinsburg, Pa. McClintic-Marshall Const. Co.
1.	G. H. Ferguson, B.A.Sc.....	Toronto, Ont.
3.	H. S. Fierheller, B.A.Sc.....	Toronto, Ont.
3.	F. W. Harrison.....	Chief Mechanical Draftsman, 360 Pearl St., Edison Electric Illuminating Co. Brooklyn, N.Y.
1.	M. C. Hendry.....	Post-Graduate Course in Engineering, Toronto, Ont. University of Toronto.
2.	C. S. L. Hertzberg	Dominion Power & Transmission Co. Hamilton, Ont.
3.	W. G. Hewson.....	Stamford, Conn.
1.	G. S. Jones.....	Smith's Falls, Ont.
3.*	G. Kribs	Construction Engineer, Montreal, Que. Canadian Westinghouse Co.
1.	A. Latornell, B.A.Sc.....	Sewer Dept., City Hall. Toronto, Ont.
3.	J. W. Leighton.....	Secretary, Evans Rotary Engine Co. Toronto, Ont.
1.*	T. R. Loudon, B.A.Sc.....	Lecturer in Drawing, Toronto, Ont. University of Toronto.
3.	S. E. McGorman.....	Draftsman, Walkerville, Ont. Canadian Bridge Co.
1.*	W. W. McGregor (deceased).	

*Diploma with honours.

1905—*Continued.*

Course.	Name and address.	Occupation.
2. D. W. McKenzie.....	Draftsman, Engineering Dept., Winnipeg, Man.	C. N. Ry.
3.*C. A. McLean.....	Canadian Westinghouse Co. Toronto, Ont.	
2. W. N. McLean.....		
3. F. G. Mace	Hamilton Motor Works. Hamilton, Ont.	
3. R. W. Moffatt, B.A.Sc.....	Demonstrator in Drawing, Toronto, Ont.	University of Toronto.
3. L. W. Morden.....	Canadian Westinghouse Co. Montreal, Que.	
3. G. R. Munro, B.A.Sc.....	With Hudson Bay Survey. Peterboro, Ont.	
3.*W. G. Nicklin, B.A.Sc.....	Grand Rapids Veneer Works. 151 Watson St., Grand Rapids, Mich.	
1. E. D. O'Brien.....	Merrickville, Ont.	
1.*B. B. Patten, B.A.Sc.....	St. George, Ont.	
1. E. P. A. Phillips, B.A.Sc.....	Town Engineer. Bracebridge, Ont.	
1. W. B. Porte.....	Oakville, Ont.	
2. E. F. Pullen.....	Draftsman, Transcontinental R.R. Abittibi, Ont.	Survey.
2. G. L. Ramsey, B.A.Sc.....	Dunnville, Ont.	
1. G. W. Rayner.....	Toronto, Ont.	
3.*R. B. Ross.....	Engineer, International Marine Sig- New York, N.Y.	nal Co.
5. T. E. Rothwell, B.A.Sc.....	Provincial Assay Office. Belleville, Ont.	
2.*G. S. Scott.....	Geologist, with H. S. Scott, British New York, N.Y.	Consulate.
3. H. V. Serson.....	Taylor Iron & Steel Co. Highbridge, N.J.	
3. C. H. Shirriff, B.A.Sc.....	Toronto, Ont.	

*Diploma with honours.

1905—*Continued.*

Course.	Name and address.	Occupation.
3.*C. E. Sisson.....	Engineering Dept., Can. Gen. Elec. Co. Peterboro, Ont.	
1. D. L. N. Stewart, B.A.Sc.....	Collingwood, Ont.	
1. M. A. Stewart.....	Asst. City Engineer, Roadway Dept., Toronto, Ont.	City Hall.
3.*W. F. Stubbs.....	Draftsman, Goldie & McCulloch Co. Galt, Ont.	
1. N. H. Sturdy.....	Designer, L. S. & M. S. Ry. Cleveland, O.	
1. W. G. Swan, B.A.Sc.....	Demonstrator in Strength of Ma- terials, University of Toronto.	
1.*F. H. Sykes, O.L.S.....	41 Hayden St., Toronto, Ont.	
3. L. R. Thomson, B.A.Sc.....	Demonstrator in Drawing, Toronto, Ont.	University of Toronto.
3. E. D. Tillson, B.A.Sc.....	With G. M. Gest, New York, N.Y.	277 Broadway.
1.*J. J. Traill, B.A.Sc.....	Demonstrator in Hydraulics, Toronto, Ont.	University of Toronto.
1.*W. M. Treadgold, B.A.....	Lecturer in Surveying, Toronto, Ont.	University of Toronto.
3. W. E. Turner, B.A.Sc.....	Salt Lake City, Utah.	
3. Uren, A. E.....	Editorial Staff, Canadian Engineer. Toronto, Ont.	
3. J. M. Vaughan.....	Contractor. Toronto, Ont.	
1. H. L. Wagner, B.A.Sc.....	Toronto, Ont.	
2. W. H. Young, B.A.Sc., D.L.S...	Hamilton & Young, Dominion Land Lethbridge, Alta.	Surveyors and Engineers.

1906.

1. F. Alport		
3.*W. L. Amos.....	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
1. A. H. Arens.....	Resident Engineer, Inverness, C.B.	Inverness Ry. & Coal Co.
3.*J. C. Armer, B.A.Sc.....	Editor, Toronto, Ont.	"Canadian Manufacturer."

*Diploma with honours.

1906—Continued.

Course.	Name and address.	Occupation.
1. M. H. Baker, B.A.Sc.....	With W. G. McFarlane, Engineer & St. Thomas, Ont.	Surveyor, Peace River Dist.
3. F. W. Baldwin.....	With Graham Bell, Esq. Baddeck, N.S.	
Course.	Name and address.	Occupation.
2. E. W. Banting, B.A.Sc.....	Demonstrator in Surveying, Toronto, Ont.	University of Toronto.
3. F. Barber	York County Engineer, Toronto, Ont.	Adelaide St. E.
2. M. Bates, B.A.Sc.....	Haileybury, Ont.	
2. J. P. Bellisle (deceased).		
3.*H. H. Betts, B.A.Sc.....	With Solway Process Co. Syracuse, N.Y.	
5.*D. E. Beynon, B.A.Sc.....	With the Continental-Mexican Torreon, Coahuila, Mexico.	Rubber Co.
2. G. W. Bissett.....	With Drummond Mines. Giroux Lake P.O., Ont.	
3. W. C. Blackwood.....	Fellow in Physics, Toronto, Ont.	University of Toronto.
3. H. E. Brandon, B.A.Sc.....	Coleman, Ont.	
1. M. E. Brian, B.A.Sc.....	City Engineer. Windsor, Ont.	
2. T. W. Brown.....	Toronto, Ont.	
1.*A. E. K. Bunnell, B.A.Sc.....	Asst. to Resident Engineer, C.P.R. Toronto, Ont.	
3. F. M. Byam.....	Toronto, Ont.	
3. A. Cameron	Draftsman, Lackawanna Steel Co. Buffalo, N.Y.	
3. A. W. Campbell	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
1. M. J. Carroll.....	Topographical Surveys Branch, Ottawa, Ont.	Department of the Interior.
3.*R. E. C. Chadwick.....	Fellow in Drawing, Toronto, Ont.	University of Toronto.

*Diploma with honours.

1906—Continued.

Course.	Name and address.	Occupation.
1.*G. T. Clark, B.A.....	Palmerston, Ont.	
3.*G. A. Colhoun.....	With The Hamilton Bridge Works Hamilton, Ont.	Co., Ltd.
1.*W. A. M. Cook, B.A.Sc.....	Asst. to H. R. McEvoy, D.L.S. Toronto, Ont.	
1.*E. L. Cousins, B.A.Sc.....	Resident Engineer, G. T. Ry., Middle Toronto, Ont.	and Southern Division.
4. A. G. Creighton.....	Creighton & McConnell, Architects & Prince Albert, Sask.	Structural Engineers.
4. W. N. Daniels.....	With John R. Wiggins & Co. 1215 Filbert St. Philadelphia, Pa.	
3.*N. P. F. Death, B.A.Sc.....	Death & Watson, Electrical Engineers 25 Jarvis St., Toronto, Ont.	& Contractors.
3. C. S. Dundass, B.A.Sc.....	Demonstrator in Electrical Engineer- Toronto, Ont.	ing, University of Toronto.
3. S. L. Fear.....	With Dunbar, Sullivan Dredging Co. Amherstburg, Ont.	
5.*C. C. Forward.....	Laboratory of the Inland Revenue Ottawa, Ont.	Dept.
5. C. W. Graham, B.A.Sc.....	With Wm. Davies Co. Toronto, Ont.	
1.*P. W. Greene.....	With Hydro-Electric Power Com- Toronto, Ont.	mission.
3. C. B. Hamilton, B.A.Sc.....	43 Madison, Ave. Toronto, Ont.	
1.*A. L. Harkness, B.A.Sc.....	Iroquois, Ont.	
1.*R. L. Harrison.....	Resident Engineer, Cap Sante, P.Q.	Canadian Northern Ry.
1. E. Harrison, B.A.Sc.....	Asst. to District Engineer Dept. of Regina, Sask.	Public Works.
3. J. C. Hartney, B.A.Sc.....	Electrical Engineer, with Fetherston- Ottawa, Ont.	haugh, Blackmore & Dennison.
1. S. Hett, B.A.Sc.....	Sutton West, Ont.	
3. C. R. Hillis.....		

*Diploma with honours.

1906—Continued.

Course.	Name and address.	Occupation.
3.	C. W. Hookway, B.A.Sc.....	Allis-Chalmers Bullock Co. Montreal, P.Q.
3.	R. H. Hopkins, B.A.Sc.....	Demonstrator in Electrical Engineering, Toronto, Ont. University of Toronto.
1.*	R. S. Houston.....	Emerson, Man.
2.*	W. Huber	Bracebridge, Ont.
3.*	A. H. Hull, B.A.Sc.....	Hamilton, Ont.
3.	W. C. Jepson.....	Welland Canal Office. St. Catharines, Ont.
1.*	C. Johnston, B.A.Sc.....	Resident Engineer, Can. Northern Ry. Toronto, Ont.
1.	G. R. Jones, B.A.Sc.....	Student, Victoria College. Toronto, Ont.
3.	T. Jones, B.A.Sc.....	18 Meredith Crescent. Toronto, Ont.
1.*	A. E. Jupp, B.A.Sc.....	City Engineer's Dept. Toronto, Ont.
3.	J. D. Keppy.....	Post-Graduate Course in Engineering, Toronto, Ont. University of Toronto.
1.	J. L. Lang, B.A.Sc., D. & O.L.S.	Lang & Keys, Sault Ste. Marie, Ont. Engineers & Surveyors.
3.	A. P. Linton, B.A.Sc.,	Montreal, Que.
4.*	A. W. McConnell, B.A.Sc.....	Lecturer in Architecture, Toronto, Ont. University of Toronto.
3.*	D. G. McIlwraith.....	Draftsman, The Goldie & McCulloch Galt, Ont. Co., Ltd.
2.	J. A. McKenzie.....	Resident Engineer, Box 535, Winnipeg, Man. C.P.R. Construction Dept.
1.*	J. V. McNab.....	Transitman, C.P.R. Engineering Staff. Kenora, Ont.
3.	J. A. McPherson.....	Student, Faculty of Medicine, Queen's Kingston, Ont. University.
2.	K. A. MacKenzie, B.A.Sc.....	Assistant Secretary and Librarian, Toronto, Ont. Faculty of Applied Science.
1.	W. MacKinnon	820 Holland Ave., Wilkinsburg, Pa.

*Diploma with honours.

1906—Continued.

Course.	Name and address.	Occupation.
3.*W. Maclachlan, B.A.Sc.....	Electrical Superintendent, Dominion Port Colborne, Ont.	Govt. Grain Elevator.
3.*D. W. Marrs.....	With The Hamilton Bridge Works Hamilton, Ont.	Co., Ltd.
3. W. A. Maxwell.....	Draftsman, G.T.P. Ry. Upper Fraser River, B.C.	
1.*J. M. Menzies, B.A.Sc.....	Student in Theology, Knox College. Toronto, Ont.	
3. L. R. Miller, B.A.Sc.	Orillia, Ont.	
1.*B. F. Mitchell, B.A.Sc. . . .	City Engineer's Office. Edmonton, Alta.	
1. F. F. Montague.	Law Student. 504 Union Bank Bldg., Winnipeg, Man.	
1.*W. J. Moore, O.L.S.....	Morris and Moore, Pembroke, Ont.	Land Surveyors and Architects.
1. C. R. Murdock.....	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
2. C. J. Murphy.....	Chemist and Metallurgist. Copper Cliff, Ont.	
1.*W. P. Near, B.A., B.A.Sc.....	Staff of T. & N. O. Ry. St. Mary's, Ont.	
2. R. Neelands		
3. D. G. Park, B.A.Sc.....	Engineering Apprentice, West Allis, Wis.	Allis-Chalmers Co.
3. G. W. Paterson.....	Tapscott, Alta.	
5. R. E. Pettingill.....	Assistant Chemist, Belleville, Ont.	Belleville Portland Cement Co.
2.*R. C. Purser, B.A.Sc.....	Fellow in Surveying, Toronto, Ont.	University of Toronto.
3. N. R. Robertson, B.A.Sc.....	Canada Life Bldg., Toronto, Ont.	
1. J. O. Roddick, B.A.Sc.....	Assistant Engineer, Dept of Public Toronto, Ont.	Works.
1. C. H. Rogers, B.A.Sc.....	Peterboro Canoe Co. Peterboro, Ont.	

*Diploma with honours.

1906—Continued.

Course.	Name and address.	Occupation.
2.*O. Rolfson, B.A.Sc.....	Fellow in Surveying, Toronto, Ont.	University of Toronto.
1. R. C. Ross, B.A.Sc.....	Welland Canal Survey. Port Robinson, Ont.	
1. K. G. Ross.....	With Lang & Keys, Sault Ste. Marie, Ont.	Engineers and Surveyors.
1.*H. T. Routly, O.L.S.....	Laird & Routly, Haileybury, Ont.	Engineers and Surveyors.
2. J. H. Ryckman.....	Hamilton, Ont.	
3.*W. K. Sanders.....	West Newton, Mass.	
1.*W. A. Scott, B.A.Sc.....	Galt, Ont.	
1.*W. M. Stewart.....	Post-Graduating Course in Engineer- ing, University of Toronto.	
2. J. E. Thomson, B.A.Sc.....	Toronto, Ont.	
3.*C. L. Vickery.....	Chief Engineer, 112 Barlow St., Fall River, Mass.	American Thread Co.
5. W. E. Wickett (deceased).		
3.*J. N. Wilson, B.A.Sc.....	Electric Dept., Toronto, Ont.	City of Toronto.
3.*E. M. Wood, B.A.Sc.....	Demonstrator in Electrical Engineer- ing, University of Toronto.	

1907.

3.*F. G. Allen, B.A.Sc.....	Erie, Pa.	
1. F. J. Anderson, B.A.Sc.....	Niagara Falls, Ont.	
1. A. P. Augustine.....	With G.T.P. Co. Prince Rupert, B.C.	
3.*H. D. Bowman, B.A.Sc.....	With the Ontario Power Co. Niagara Falls, Ont.	
3. W. S. Brady.....	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
1. G. H. Broughton.....	Paris, Ont.	

*Diploma with honours.

1907—Continued.

Course.	Name and address.	Occupation.
1. J. A. Brown.....	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
1. C. E. Bush.....	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
3. J. H. Caster.....	Student in Testing Dept., Peterboro, Ont.	Can. Gen. Elec. Co.
1.*E. Cavell	City Engineer's Office. Saskatoon, Sask.	
3.*C. B. B. Connell.....	With Mirrless & Watson. Glasgow, Scotland.	
1.*G. C. Cowper.....	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
2. J. V. Culbert.....	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
3.*R. Davis	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
3. S. D. Evans, B.A.Sc.....	Leamington, Ont.	
3.*F. R. Ewart, B.A.Sc.....	Demonstrator in Electrical Engineer- ing, University of Toronto.	
1. G. R. S. Fleming.....	With Atwell Fleming Printing Co. Toronto, Ont.	
6. P. C. Fux, B.A.Sc.....	With Waterous Engine Works Co. Brantford, Ont.	
1. J. S. Galletly	With W. G. McFarlane, Engineer & Wychwood Pk., Ont.	Surveyor, Peace River Dist.
2. G. Galt, B.A.Sc.....	Treadwell Mine. Douglas, Alaska.	
1. A. B. Garrow, B.A.Sc.....	Fellow in Drawing, Toronto, Ont.	University of Toronto.
1. A. Gillies	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
1. G. W. Graham.....	Eugenia, Ont.	
3. C. S. Grasett, B.A.Sc.....	Barrie, Ont.	
1.*R. E. W. Hagarty, B.A.Sc.....	Toronto, Ont.	
3. K. Hall	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.

*Diploma with honours.

1907—Continued.

Course.	Name and address.	Occupation.
1.	Hamilton, C. T.	Post-Graduate Course in Engineering, Toronto, Ont. University of Toronto.
3.	R. A. Hare	
3.*	H. O. Hill, B.A.Sc.....	With Riter-Conley Mfg. Co. Pittsburg, Pa.
1.*	T. H. Hogg, B.A.Sc.....	With Ontario Power Co. Niagara Falls, Ont.
3.*	C. H. Hutton, B.A.Sc.....	
1.	H. M. Hyland, B.A.Sc.	
3.	E. W. Hyman, B.A.Sc.....	Fellow in Drawing, Toronto, Ont. University of Toronto.
3.*	L. G. Ireland, B.A.Sc.....	
1.*	W. Jackson	Post-Graduate Course in Engineering, Toronto, Ont. University of Toronto.
4.*	C. B. Jackson.....	
3.*	E. W. Kay, B.A.Sc.....	
3.	D. F. Keith.....	
1.	H. P. Keith.....	With Driscoll & Knight, Surveyors Edmonton, Alta. and Engineers.
1.	A. A. Kinghorn, B.A.Sc.....	Fellow in Physics, Toronto, Ont. University of Toronto.
1.	L. W. Klingner.....	
1.*	F. C. Lamb.....	Post-Graduate Course in Engineering, Toronto, Ont. University of Toronto.
3.	A. D. LePan, B.A.Sc.....	Demonstrator in Drawing. Toronto, Ont. University of Toronto.
1.	J. H. Lindsay.....	
3.	J. A. D. McCurdy.....	With Graham Bell, Esq. Baddeck, C.B., N.S.
1.*	J. B. McFarlane, B.A.Sc.....	
	60 Lonsdale Rd., Toronto, Ont.	

*Diploma with honours.

1907—Continued.

Course.	Name and address.	Occupation.
3.*D. J. McGugan, B.A.Sc.....	Sumas Development Co. Chilliwack, B.C.	
3. A. H. McIntosh.....	With Illinois Steel Co. Chicago, Ill.	
3. F. W. McNeil, B.A.Sc.....	Canadian General Electric Co. Peterboro, Ont.	
1. M. K. McQuarrie.....	With C. P. Ry. Co. Albernie, B.C.	
1.*G. MacLeod	Assistant Secretary, Can. Soc. C.E. Montreal, P.Q.	
1. A. G. Mackay	With The Hudson Terminal Co. New York, N.Y.	
1. W. S. Malcolmson, B.A.Sc.....	Toronto, Ont.	
3. S. A. Marshall	With The Hamilton Bridge Works Hamilton, Ont. Co.	
6. D. H. C. Mason, B.A.Sc.....	Toronto, Ont.	
3. H. V. Maynard.....	Engineering Course, Peterboro, Ont. Canadian General Electric Co.	
1. J. W. Melson	Post-Graduate Course in Engineering, Toronto, Ont. University of Toronto.	
1. G. G. Mills, B.A.Sc.....	Fellow in Drawing, Toronto, Ont. University of Toronto.	
3. J. B. Minns.....	Post-Graduate Course in Engineering, Toronto, Ont. University of Toronto.	
4.*G. N. Molesworth.....	Draftsman, Eden Smith & Son, Toronto, Ont. Architects.	
1. J. M. Moore, B.A.Sc.....	London, Ont.	
5.*P. F. Morley.....	Toronto, Ont.	
1. E. W. Murray.....	Post-Graduate Course in Engineering, Toronto, Ont. University of Toronto.	
3. J. D. Murray	With Fetherstonhaugh & Co., Toronto, Ont. Patent Solicitors and Engineers.	
1. E. W. Neelands, B.A.Sc.....	Neelands & Sutcliffe, New Liskeard, Ont. Consulting Engineers.	
1. R. E. K. Neelands.....	Brampton, Ont.	

*Diploma with honours.

1907—Continued.

Course.	Name and address.	Occupation.
2 *B. Neilly, B.A.Sc.....	Cobalt, Ont.	Assayer, Silver Queen Mine.
1. A. E. Nourse, B.A.Sc... ..	Toronto, Ont.	
3. J. J. O'Sullivan.....	Toronto, Ont.	
2. T. K. Paton.....	Wardner, Ida.	Miner.
1. F. W. Paulin, O.L.S.....	Niagara Falls, Ont.	
1. R. B. Potter.....	Lieury, Ont.	
3.*F. E. Prochnow.....	Toronto, Ont.	Post-Graduate Course in Engineering, University of Toronto.
3.*J. F. Procunier.....	Toronto, Ont.	Fellow in Electricity, University of Toronto.
3. G. E. Quance, B.A.Sc.....	Delhi, Ont.	
3.*H. Raine	Hamilton, Ont.	With Hamilton Bridge Works Co
1 *J. L. Rannie	Ottawa, Ont.	Dominion Observatory.
3. C. W. B. Richardson, B.A.Sc...	Warton, Ont.	
1. A. A. Ridler.....	Toronto, Ont.	City Engineer's Dept.
5. H. E. Rothwell.....	Toronto, Ont.	Fellow in Chemistry, University of Toronto.
5. C. A. Schofield	Buffalo, N.Y.	Chemist, Niagara Frontier Labora- tory.
1.*A. C. T. Sheppard.....	Ottawa, Ont.	Engineering Staff, Can. Pacific Ry.
1. F. R. Smith.....	Toronto, Ont.	City Engineer's Dept.
3. E. R. Smithrim, B.A.Sc.....	Cobalt, Ont.	
1.*W. Snaith	Toronto, Ont.	With McGregor & McIntyre.
3.*A. C. Spencer, B.A.Sc.....	Toronto, Ont.	Fellow in Drawing, University of Toronto.

*Diploma with honours.

1907—*Continued.*

Course.	Name and address.	Occupation.
3.	G. S. Stewart..... Strathroy, Ont.	
1.	J. A. Stiles, B.A.Sc.....	Demonstrator in Drawing, University of Toronto.
3.*	J. L. Stiver	Post-Graduate Course in Engineering, University of Toronto.
1.	G. F. Summers	Post-Graduate Course in Engineering, University of Toronto.
1.*	H. W. Sutcliffe	Sutcliffe & Neelands, Consulting Engineers.
1.	P. M. Thompson, B.A.Sc..... Picton, Ont.	
3.	O. R. Thomson, B.A.Sc..... Toronto, Ont.	
1.	L. R. Thomson, B.A.Sc.....	Demonstrator in Drawing, University of Toronto.
1.	W. J. Walker	With Transcontinental Ry. Nipigon, Ont.
1.	E. D. Wilkes, B.A.Sc..... Toronto, Ont.	
3.	A. F. Wilson, B.A.Sc..... Chicago, Ill.	
3.	M. H. Woods.....	Fellow in Drawing, University of Toronto.
3.*	A. R. Zimmer	Post-Graduate Course in Engineering, University of Toronto.

1908.

3.	H. G. Akers.....	Post-Graduate Course in Engineering, University of Toronto.
3.	L. F. Allan	
1.*	C. B. Allison	
1.*	R. M. Anderson	Res. 3 Dist. D., Trans. Ry. McDougall Chutes, Ont.
5.	J. R. Arens	
3.	H. C. Barber	Electrical Department, City of Toronto.

*Diploma with honours.

1908—Continued.

Course.	Name and address.	Occupation.
1. E. Bartlett	Smithville, Ont.	
2. F. J. Bedford	Lakefield, Ont.	
1.*G. G. Bell	Chesley, Ont.	
3. G. E. Black	Stratford, Ont.	
3. H. F. Bowes	Toronto, Ont.	
3.*J. H. Brace	Brockville, Ont.	
1. P. R. Brecken	Toronto, Ont.	Post-Graduate Course in Engineering, University of Toronto.
3. E. I. Brown	Paris, Ont.	
1. Bryce, W. F. M.	Toronto, Ont.	
3. P. H. Buchan	Toronto, Ont.	Post-Graduate Course in Engineering, University of Toronto.
2. J. E. Campbell	Ivan, Ont.	
3. N. A. Campbell	Calgary, Alta.	Chief Chemist, Alberta Portland Cement Co.
3. A. M. Carroll	Richmond Hill, Ont.	
1. H. R. Carscallen	Toronto, Ont.	Post-Graduate Course in Engineering, University of Toronto.
3. G. Challen	Simcoe, Ont.	
1. F. H. Chesnut	Toronto, Ont.	Post-Graduate Course in Engineering, University of Toronto.
4.*W. C. Collett	Toronto, Ont.	Post-Graduate Course in Engineering, University of Toronto.
1. R. Y. Cory	Toronto, Ont.	Post-Graduate Course in Engineering, University of Toronto.
3.*H. Coyne	Toronto, Ont.	Post-Graduate Course in Engineering, University of Toronto.
2.*J. D. Cumming	Toronto, Ont.	

*Diploma with honours.

1908—Continued.

Course.	Name and address.	Occupation.
6. A. D. Dahl	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
3. J. Darroch	Gillies Hill, Ont.	
Course.	Name and address.	Occupation.
2*F. C. Dyer	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
1. F. M. Eagleson	Gorrie, Ont.	
1. C. Edwards	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
1. S. L. Evans	Corinth, Ont.	
1. O. L. Flanagan	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
1. A. H. Foster	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
3. G. C. Francis	City Engineers Staff, Toronto, Ont.	Roadway's Dept.
3. S. S. Gear	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
1. C. A. Grassie	Welland, Ont.	
3.*C. L. Gulley	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
3. J. W. Hackner	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
3. F. L. Haviland	West Lorne, Ont.	
1.*C. D. Henderson	Canadian Bridge Co. Walkerville, Ont.	
5.*D. J. Huether	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
1. A. D. Huether	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
3.*A. N. Hunter	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
3. S. B. Iler	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
1.*J. T. Johnston	Trent Canal Co. Campbellford, Ont.	

*Diploma with honours.

1908—Continued.

Course.	Name and address.	Occupation.
1.*W. R. Keys	Winchester, Ont.	
3.*J. N. M. Leslie	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
3. F. C. Lewis	Ingersoll, Ont.	
3. H. R. Lynar	Toronto, Ont.	
1.*W. G. McGeorge	Chatham, Ont.	
1. J. M. McGregor	Ridgetown, Ont.	
1. L. A. McLean	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
1. W. A. A. McMaster	Palmerston, Ont.	
1. H. C. McMordie	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
1.*A. A. McRoberts	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
5.*N. G. Madge	568 Columbus Ave., Boston, Mass.	
3. J. E. Malone	With Illinois Steel Co. Chicago, Ill.	
5. K. D. Marlatt	Oakville, Ont.	
1. R. J. Marshall	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
5. G. L. Milligan	Brampton, Ont.	
1. A. B. Mitchell	Fellow in Drawing, Toronto, Ont.	University of Toronto.
4.*J. C. P. Molesworth	Draftsman, Chadwick & Beckett. Toronto, Ont.	
3. E. D. Monk	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
3.*F. H. Moody	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.

*Diploma with honours.

1908—*Continued.*

Course.	Name and address.	Occupation.
3. J. H. Morice	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
3. F. E. H. Mowbray	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
3.*W. P. Murray	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
3. W. deC. O'Grady	Toronto, Ont.	
1. H. J. Peckover	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
1.*M. Pequegnat	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
1. H. G. Phillips	Minden, Ont.	
3. M. Pivnick	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
1.*E. M. Proctor	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
3.*C. F. Publow	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
1. J. T. Ransom	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
1.*W. B. Redfern	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
1. A. R. Robertson	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
5. F. A. Robertson	Chemist, E. B. Eddy Co. Hull, P.Q.	
1.*W. A. Robinson	Winnipeg, Man.	
3. R. C. Robinson	Winnipeg, Man.	
5. L. J. Rogers	Fellow in Chemistry, Toronto, Ont.	University of Toronto.
2.*R. R. Rose	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
3. D. Ross	London, Ont.	
3. J. St. Lawrence	With W. & J. G. Greey. Toronto, Ont.	

*Diploma with honours.

1908—Continued.

Course.	Name and address.	Occupation.
1. A. O. Secord	Brantford, Ont.	
3. W. E. V. Shaw	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
3. H. F. Shearer	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
1. W. L. Stamford	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
3. R. H. Starr	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
3. A. W. J. Stewart	Bunyan, Ont.	
1. J. J. Stock	Toronto, Ont.	
1. H. B. Stuart	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
2. J. L. G. Stuart	Toronto, Ont.	
3. A. D. Sword	Student, Civil Engineering, Toronto, Ont.	University of Toronto.
3. J. W. R. Taylor	Campbellford, Ont.	
1.*W. E. Taylor	Owen Sound, Ont.	
3. V. C. Thomas	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
1. J. H. Thornley	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
1. C. G. Toms	Toronto, Ont.	
1. H. W. Tye	Construction Dept., C.P.R. Winnipeg, Man.	
3. C. P. VanNorman	Student, Civil Engineering, Toronto, Ont.	University of Toronto.
1. T. L. Villeneuve	Asst. Engineer, Dept of Public Chicoutimi, Que.	Works.
3.*B. W. Waugh	Berlin, Ont.	
3. R. M. Wedlake	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.

*Diploma with honours.

1908—Continued.

Course.	Name and address.	Occupation.
1. A. M. West	With White Valley I. & P. Co. Vernon, B.C.	
1. W. R. White	Drayton, Ont.	
3. W. J. White	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
3.*F. D. Wilson	Post-Graduate Course in Engineering, Toronto, Ont.	University of Toronto.
1. J. M. Wilson	General Manager, W. H. Oliver Co. Toronto, Ont.	Chemical & Mechanical Engineers.
1. D. O. Wing	With G.T.P. Co. Prince Rupert, B.C.	
3.*R. Young	Lake Bunstzen, Burrard Inlet, B.C.	

CERTIFICATES.

MINERALOGY AND ASSAYING.

Date.	Name and Address.
1896. G. Johnston	
1896. A. T. Tye	c/o Empresa Hanséatica, Barran quilla, Columbia, S. America.
1897. E. B. Webster	
1898. A. N. McMillan	Penetanguishene, Ont.
1900. A. H. Smith	Supt., Los Reyes Gold Mining and Milling Co., Oaxaca, Mexico.
1901. G. A. Hunt	

ELECTRICITY.

1896. E. I. Sifton	Manager, London Electric Construc- tion Co., London, Ont.
1903. W. Elwell	Top. Surveys Branch, Dept. of the Interior, Ottawa, Ont.

*Diploma with honours.

INDEX TO GRADUATES.

In the following alphabetical list of the Graduates is given the year of graduation of each student. In the preceding list, which is arranged by classes in the order of graduation, may be found additional information as to occupation, addresses, etc.

A.

Acres, H. G.	1903	Andrews, E.	1897
Akers, H. G.	1908	Angus, R. W.	1894
Alexander, J. H.	1904	Angus, H. H.	1903
Alison, T. H.	1892	Apsey, J. F.	1888
Alison, J. G. R.	1903	Ardagh, A. G.	1893
Allan, J. R.	1892	Ardagh, E. G. R.	1900
Allan, J. L.	1900	Arens, H. W. (deceased) ..	1905
Allan, L. F.	1908	Arens, J. R.	1908
Allen, F. G.	1907	Armer, J. C.	1906
Allison, C. B.	1908	Armour, R. H.	1905
Alport, F.	1906	Armstrong, J.	1895
Amos, W. L.	1906	Ashbridge, W. T.	1888
Anderson, A. G.	1892	Augustine, A. P.	1907
Anderson, F. J.	1907	Aylsworth, C. B.	1905
Anderson, R. M.	1908		

B.

Baldwin, F. W.	1906	Beatty, H. J.	1890
Bain, J. A.	1900	Beatty, W. G.	1901
Bain, J. W.	1896	Beatty, J. A.	1903
Baker, M. H.	1906	Beauregard, A. T.	1894
Ball, E. F.	1888	Bedford, F. J.	1908
Ballantyne, H. F.	1893	Begg, W. A.	1905
Banting, E. W.	1906	Bell, G. G.	1905
Barber, H. G.	1902	Bell, G. G.	1908
Barber, T.	1899	Bellisle, J. P. (deceased) ..	1906
Barber, W.	1905	Bergey, A. E.	1894
Barber, F.	1906	Bertram, G. M.	1901
Barber, H. C.	1908	Betts, H. H.	1906
Barker, H. P.	1893	Beynon, D. E.	1906
Barley, J. H.	1900	Bissett, G. W.	1906
Barrett, R. H. (deceased) .	1901	Black, G. E.	1908
Barrett, J. H.	1904	Blackwood, A. E.	1895
Bartlett, E.	1908	Blackwood, W. C.	1906
Bates, M.	1906	Blair, W. J.	1902

Bleakley, J. F.	1885	Brodie, W. M.	1895
Boeckh, J. C.	1906	Broughton, G. H.	1907
Bonnell, M. B.	1904	Broughton, J. T.	1901
Boswell, E. J.	1895	Brown, J. M.	1902
Boswell, M. C.	1900	Brown, T. W.	1906
Boustead, W. E. (deceased)	1890	Brown, D. B.	1888
Bow, J. A.	1897	Brown, G. L.	1893
Bowers, W. J. (deceased) ..	1901	Brown, L. L.	1895
Bowes, H. F.	1908	Brown, T. D.	1904
Bowman, H. J.	1885	Brown, J. A.	1907
Bowman, H. D.	1907	Brown, E. I.	1908
Bowman, F. M.	1890	Bryce, W. F. M.	1908
Bowman, A. M.	1886	Buchan, P. H.	1908
Boyd, D. G.	1894	Bucke, M. A. (deceased) ..	1890
Boyd, W. H.	1898	Buck, W. A.	1894
Brace, J. H.	1908	Bunnell, A. E. K.	1906
Brady, W. S.	1907	Burd, J. H.	1903
Brandon, E. T. J.	1901	Burgess, E. L.	1903
Brandon, H. E.	1906	Burns, D.	1883
Bray, L. T.	1900	Burns, J. C. (deceased) ...	1887
Brebner, G. (deceased) ...	1895	Burnham, F. W.	1904
Brecken, P. R.	1908	Burnside, J. T. M.	1899
Brereton, W. P.	1901	Burwash, L. T.	1896
Breslove, J.	1903	Burwash, N. A.	1903
Brian, M. E.	1906	Bush, C. E.	1907
Bristol, W. M.	1905	Byam, F. M.	1906

C.

Calder, J. W.	1904	Carroll, A. M.	1908
Cameron, N. C.	1904	Carscallen, H. R.	1908
Cameron, A.	1906	Carson, W. R.	1905
Campbell, A. J.	1904	Carter, W. E. H.	1898
Campbell, A. M.	1904	Carroll, M. J.	1906
Campbell, W. G.	1902	Caster, J. H.	1907
Campbell, A. R.	1902	Cavell, E.	1907
Campbell, R. J.	1895	Chace, W. G.	1901
Campbell, G. M.	1896	Chadwick, R. E. C.	1906
Campbell, W. C.	1905	Challen, G.	1908
Campbell, N. A.	1908	Challies, J. B.	1904
Campbell, A. W.	1906	Chalmers, W. J.	1889
Campbell, J. E.	1908	Chalmers, J.	1894
Canniff, C. M.	1888	Charlesworth, L. C.	1893
Carey, B.	1899	Charlton, H. W.	1897
Carmichael, C. G. (deceased)	1902	Chase, A. V.	1906
Carpenter, H. S.	1897	Chestnut, F. H.	1908

Chewett, H. J.	1888	Connor, A. W.	1895
Chilver, C. A.	1904	Cook, W. A. Mc.	1906
Chilver, H. L.	1904	Cooper, C.	1899
Christie, W.	1902	Corrigan, G. D. (deceased) .	1890
Christie, U. W.	1904	Corrigan, T. E.	1905
Christie, A. G.	1901	Cory, R. Y.	1908
Chubbuck, L. B.	1899	Coulson, C. L.	1903
Clark, J.	1900	Cousins, E. L.	1906
Clark, G. T.	1906	Coulthard, R. W.	1899
Clark, F. F.	1903	Cowan, W. A.	1904
Clement, W. A.	1889	Cowper, G. C.	1907
Clement, S. R. A.	1905	Coyne, H.	1908
Clothier, G. A.	1899	Craig, J. A.	1899
Coates, P. C.	1904	Craig, S. E.	1904
Cockburn, J. R.	1901	Creighton, A. G.	1906
Code, S. B.	1904	Crerar, S. R.	1904
Code, T. F. (deceased)	1904	Crosby, N. L. R.	1905
Colhoun, G. A.	1906	Culbert, M. T.	1902
Collett, W. C.	1908	Culbert, J. V.	1907
Conlon, F. T.	1902	Cumming, R.	1902
Connell, C. B. B.	1907	Cumming, J. D.	1908
Connor, H. V.	1902	Currie, W. M.	1904

D.

Dahl, A. D.	1908	Dickinson, E. D.	1900
Daniels, W. N.	1906	Dill, C. W.	1891
Darling, E. H.	1898	Dixon, H. A.	1900
Darroch, J.	1908	Dobie, J. S.	1895
Davis, R.	1907	Douglas, W. E.	1902
Davison, J. E.	1900	Duff, J. A. (deceased)	1890
Davison, A. E.	1903	Duff, W. A.	1901
Deacon, T. R.	1891	Duggan, G. H.	1883
Death, N. P. F.	1906	Dundass, C. S.	1906
DeCew, J. A.	1896	Dunlop, R. J.	1902
Depew, H. H.	1904	Dunn, T. H.	1893
Dickson, G. W.	1900	Dyer, F. C.	1908

E.

Eagleson, F. M.	1908	Elwell, W.	1902
Eason, D. E.	1901	Empey, J. M.	1902
Edwards, W. M.	1902	English, A. B. (deceased) .	1890
Edwards, C.	1908	Evans, S. D.	1907
Elliott, H. P.	1896	Evans, S. L.	1908
Elliott, J. C.	1899	Ewart, J. A.	1894
Elder, A. J.	1904	Ewart, F. R.	1907

F.

Fairbairn, J. M. R.	1893	Ford, A. L.	1904
Fairchild, C.	1892	Forester, C.	1893
Fear, S. L.	1906	Forman, W. E.	1899
Fensom, C. J.	1903	Forward, E. A.	1897
Ferguson, G. H.	1905	Forward, C. C.	1906
Fierheller, H. S.	1905	Foster, A. H.	1908
Fingland, W.	1893	Francis, W. J.	1893
Flanagan, O. L.	1908	Francis, C. C.	1908
Fleck, J. G.	1904	Fuce, E. O.	1903
Fleming, G. R. S.	1907	Fullerton, C. H.	1900
Forbes, D. L. H.	1902	Fux, P. C.	1907

G.

Gaby, F. A.	1903	Gordon, J. P.	1904
Gagné, S.	1901	Gourlay, W. A.	1903
Galletly, J. S.	1907	Graham, C. W.	1906
Galt, G.	1907	Graham, G. W.	1907
Gardner, J. C.	1903	Grant, W. F.	1898
Garland, N. L. (deceased) ..	1890	Grasett, C. S.	1907
Garrow, A. B.	1907	Grassie, C. A.	1908
Gear, S. S.	1908	Gray, A. T.	1897
George, R. E.	1903	Gray, W. W.	1904
Gibbons, J.	1888	Gray, A.	1904
Gibson, A. E.	1902	Greene, P. W.	1906
Gibson, N. R.	1901	Greenwood, W. K.	1904
Gibson, W. S.	1904	Guernsey, F. W.	1895
Gillespie, P.	1903	Gulley, C. L.	1908
Gillies, A.	1907	Gurney, W. C.	1896
Goldie, A. R.	1893	Guest, W. S.	1900
Goodwin, A. C.	1902	Guy, E.	1899
Goodwin, J. B.	1892		

H.

Hackner, J. W.	1908	Hanes, G. S.	1903
Hagarty, R. E. W.	1907	Hanning, G. F.	1889
Haight, H. V.	1896	Hara, L. D.	1904
Hall, K.	1907	Hare, R. A.	1907
Hamer, A. T. E.	1901	Harcourt, F. Y.	1903
Hamilton, J. F.	1903	Hare, W. A.	1899
Hamilton, C. B.	1906	Harkness, A. H.	1895
Hamilton, C. T.	1907	Harkness, A. L.	1906
Hanly, S. C.	1893	Harris, C. J.	1904

Harrison, R. L.	1906	Hicks, W. A. B.	1897
Harrison, F. W.	1905	Hill, E. M. M.	1904
Harrison, E.	1906	Hill, S. N.	1904
Hartney, J. C.	1906	Hill, H. O.	1907
Harvey, C.	1901	Hillis, C. R.	1906
Haultain, H. E. T.	1889	Hogg, T. H.	1907
Haviland, F. L.	1908	Holcroft, H. S.	1900
Hayes, L. J.	1903	Hookway, C. W.	1906
Hemphill, W.	1900	Hopkins, R. H.	1906
Henderson, E. E.	1885	Horton, J. A.	1903
Henderson, F. D.	1903	Houston, R. S.	1906
Henderson, S. E. M.	1900	Huber, W.	1906
Henderson, C. D.	1908	Huether, D. J.	1908
Hendry, M. C.	1905	Huether, A. D.	1908
Henry, J. A.	1900	Hull, H. S.	1895
Henwood, C.	1902	Hull, A. H.	1906
Herald, W. J.	1894	Hunter, A. N.	1903
Hermon, E. B.	1886	Hutcheon, J.	1890
Heron, J. B.	1904	Hutton, C. H.	1907
Hertzberg, C. S. L.	1905	Hyland, H. M.	1907
Hett, S.	1906	Hyman, E. W.	1907
Hewson, W. G.	1905		

I.

Iler, S. B.	1908	Ireland, L. G.	1907
Ingles, C. J.	1904	Irvine, J.	1889
Innis, W. L.	1890		

J.

Jackson, J. G.	1903	Johnston, A. C.	1894
Jackson, F. C.	1901	Johnston, S. M.	1894
Jackson, W.	1907	Johnston, H. A.	1900
Jackson, C. B.	1907	Johnston, J. C.	1900
James, O. S.	1891	Johnston, J. A.	1900
James, D. D.	1889	Johnston, C. K.	1903
James, E. A.	1904	Johnston, C.	1906
Jepson, W. C.	1906	Johnston, J. T.	1908
Jeffrey, D.	1882	Jones, J. E.	1894
Jermyn, P. V.	1904	Jones, G. S.	1905
Job, H. E.	1894	Jones, G. R.	1906
Johnston, D. M.	1902	Jones, T.	1906
Johnston, H.	1903	Jupp, A. E.	1906

K.

Kay, E. W.	1907	King, C. F.	1897
Keefe, W. S. H.	1904	Kinghorn, A. A.	1907
Keele, J.	1893	Kirkland, W. C.	1884
Keith, D. F.	1907	Klingner, L. W.	1907
Keith, H. P.	1907	Kormann, J. S.	1898
Kennedy, J. H.	1882	Knight, R. H.	1902
Keppy, J. D.	1906	Kribs, G.	1905
Keys, W. R.	1908		

L.

Laidlaw, J. T.	1893	Latornell, A.	1905
Laidlaw, A.	1901	Lavrock, J. E.	1898
Laing, W. F. (deceased) ..	1896	Lawson, W.	1892
Laing, A. T.	1892	Lawrie, R. R. (deceased) ..	1896
Laird, R.	1886	Lea, W. A. (deceased)	1892
Lamb, F. C.	1907	Leighton, J. W.	1905
Lane, A. (deceased)	1891	LePan, A. D.	1907
Lang, A. G.	1903	Leslie, J. N. M.	1908
Lang, J. L.	1906	Lewis, F. C.	1908
Langmuir, F. L.	1902	Lindsay, J. H.	1907
Langley, C. E.	1892	Linton, A. P.	1906
Larkworthy, W. J.	1904	Lott, A. E.	1887
Laschinger, E. J.	1892	Loudon, T. R.	1905
Lash, F. L.	1893	Ludgate, B. A.	1885
Lash, N. M.	1894	Lumbers, W. C.	1901
Latham, R.	1899	Lynar, H. R.	1908
Latornell, A. J.	1903		

Mac.

MacBeth, C. (deceased) ...	1896	MacKenzie, K. A.	1906
MacKay, J. T.	1902	Mackintosh, D.	1898
MacMillan, G.	1901	Mackinnon, W.	1906
Macallum, A. F.	1893	MacIachlan, W.	1906
Macdougall, A. C.	1901	MacLeod, G.	1907
Mackay, A. G.	1907		

Mc.

McAllister, J. E.	1891	McBride, A. H.	1902
McAllister, A. L.	1893	McConnell, A. W.	1906
McAree, J. (deceased)	1882	McCuaig, O. B.	1904
McArthur, R. E.	1900	McCulloch, A. L.	1887
McAuslan, H. J.	1903	McCurdy, J. A. D.	1907

McDougall, J. (deceased) ..	1884	McKenzie, J. A.	1906
McDowall, R.	1888	McKinnon, H. L.	1895
McEntee, B.	1892	McLean, C. A.	1905
McEwen, G. G.	1904	McLean, W. N.	1905
McFarlen, G. W.	1888	McLean, L. A.	1908
McFarlen, T. J.	1893	McLennan, A. L.	1902
McFarlane, J. A.	1903	McMaster, A. T. C.	1901
McFarlane, W. G.	1904	McMaster, W. A. A.	1908
McFarlane, J. B.	1907	McMillan, J. G.	1900
McGeorge, W. G.	1908	McMillan, D.	1904
McGibbon, C. P.	1904	McMordie, H. C.	1908
McGorman, S. E.	1906	McMurchy, J. A.	1896
McGowan, J.	1895	McNab, J. V.	1906
McGregor, W. W. (deceased)	1905	McNaughton, A. L.	1903
McGregor, J. M.	1908	McNaughton, F. W.	1898
McGugan, D. J.	1907	McNeill, F. W.	1907
McIlwraith, D. G.	1906	McPherson, A. J.	1893
McIntosh, A. H.	1907	McPherson, J. A.	1906
McKay, O.	1885	McQuarrie, M. K.	1907
McKay, W. N.	1895	McRoberts, A. A.	1908
McKay, C. (deceased)	1904	McTaggart, A. L.	1894
McKenzie, D. W.	1905	McVean, H. G.	1901

M.

Mace, F. G.	1905	Maus, C. A.	1903
Madden, J. F. S.	1902	Maxwell, W. A.	1906
Madge, N. G.	1908	Maynard, H. V.	1907
Main, W. T.	1893	Meadows, W. W.	1895
Malcolmson, W. S.	1907	Melson, J. W.	1907
Malone, J. E.	1908	Menzies, J. M.	1906
Manson, G. J.	1904	Mennie, R. S.	1902
Marani, C. J.	1888	Merrill, E. B.	1890
Marani, V. G.	1893	Middleton, H. T.	1901
Marlatt, K. D.	1908	Mickle, G. R.	1888
Marriott, F. G.	1903	Mills, G. G.	1907
Marrs, C. H.	1902	Minns, J. B.	1907
Marrs, D. W.	1906	Minty, W.	1894
Marshall, S. A.	1907	Mill, F. X. (deceased)	1889
Marshall, R. J.	1908	Miller, L. Haun.	1900
Martin, F.	1887	Miller, M. L.	1903
Martin, T.	1896	Miller, L. R.	1906
Mason, D. H. C.	1907	Milligan, G. L.	1908
Matheson, W. C.	1901	Milne, C. G.	1892
Mathison, P.	1902	Mines, W.	1893

Mitchell, P. H.	1903	Moore, F. A.	1903
Mitchell, C. H.	1892	Moore, W. J.	1906
Mitchell, B. F.	1906	Moore, J. M.	1907
Mitchell, A. B.	1908	Moorhouse, W. N.	1904
Moberley, H. K.	1889	Morden, L. W.	1905
Moffatt, R. W.	1905	Morice, J. H.	1908
Molesworth, G. N.	1907	Morley, P. F.	1907
Molesworth, J. C. P.	1908	Morris, J. L.	1881
Monds, W.	1899	Mowbray, F. E. H.	1908
Monk, E. D.	1908	Mullins, E. E.	1903
Moody, F. H.	1908	Munro, W. H.	1904
Montague, F. F.	1906	Munro, G. R.	1905
Montgomery, R. H.	1903	Murdoch, C. R.	1906
Moore, H. H.	1902	Murphy, C. J.	1906
Moore, E. E.	1904	Murray, E. W.	1907
Moore, J. H.	1888	Murray, J. D.	1907
Moore, J. E. A.	1891	Murray, W. P.	1906

N.

Nash, T. S.	1902	Neilly, B.	1907
Near, W. P.	1906	Newman, W.	1891
Neelands, E. V.	1900	Nevitt, I. H.	1903
Neelands, E. W.	1907	Nicholson, C. J.	1894
Neelands, R. E. K.	1907	Nicklin, W. G.	1905
Neelands, R.	1906	Nourse, A. E.	1907

O.

O'Brien, E. D.	1905	Oliver, J. P.	1903
O'Grady, W. deC.	1908	O'Sullivan, J. J.	1907
Oliver, E. W.	1903		

P.

Pace, J. D.	1903	Paulin, F. W.	1907
Pace, G.	1904	Peeker, W. J.	1904
Pardoe, W. S.	1904	Peckover, H. J.	1908
Paris, J.	1904	Pedder, J. R. (deceased) ..	1890
Park, D. G.	1906	Pequegnat, M.	1908
Parke, J.	1904	Pettingill, R. E.	1906
Parsons, J. L. R.	1901	Philp, D. H.	1903
Paterson, G. W.	1906	Philips, E. H.	1900
Paton, T. K.	1907	Phillips, H. G.	1908
Patten, B. B.	1903	Pickering, A. E.	1904
Patten, B. B.	1905	Pinhey, C. H.	1887
Patterson, J.	1899	Pinkney, D. H.	1903

FACULTY OF APPLIED SCIENCE AND ENGINEERING. 161

Pivnick, M.	1908	Prentice, J. M. (deceased) .	1892
Playfair, N. L.	1892	Price, H. W.	1901
Phillips, E. P. A.	1905	Prochnow, F. E.	1907
Plunkett, T. H.	1903	Proctor, E. M.	1908
Pope, A. S. H.	1899	Procunier, J. F.	1907
Porte, W. B.	1906	Proudfoot, H. W. (deceased)	1897
Potter, R. B.	1907	Publow, C. F.	1908
Powell, G. G.	1902	Pullen, E. F.	1905
Power, G. H.	1901	Purser, R. C.	1906

Q.

Quance, G. E.	1907
--------------------	------

R.

Raine, H.	1907	Robinson, R. C.	1908
Ramsey, G. L.	1905	Rogers, J.	1887
Rannie, J. L.	1907	Rogers, C. H.	1906
Ransom, J. T.	1908	Rogers, L. J.	1908
Ratz, W. F.	1902	Rolph, H.	1894
Raymer, A. R.	1884	Rolfson, O.	1906
Rayner, G. W.	1905	Rose, K.	1888
Raymond, D. C.	1904	Rose, R. R.	1908
Redfern, W. B.	1908	Rosebrugh, T. R.	1889
Reid, F. B.	1904	Ross, J. A.	1892
Revell, G. E.	1899	Ross, J. E.	1888
Richards, E.	1899	Ross, D.	1908
Richardson, G. H.	1888	Ross, R. A.	1890
Richardson, C. W. B.	1907	Ross, K. G.	1906
Riddell, M. R.	1904	Ross, R. B.	1905
Ridler, A. A.	1907	Ross, R. C.	1906
Roaf, J. R.	1900	Rothwell, T. E.	1905
Robertson, F. A.	1908	Rothwell, H. E.	1907
Robertson, H. D.	1902	Roxburgh, G. S.	1904
Robertson, J.	1884	Rounthwaite, C. H. E.	1900
Robertson, J. M.	1893	Routly, H. T.	1906
Robertson, N. R.	1906	Russell, W. B.	1891
Robertson, A. R.	1908	Russel, R.	1893
Robinson, J. (deceased)...	1891	Rust, H. P.	1901
Robinson, F. J.	1895	Rutherford, F. N.	1904
Robinson, A. H. A.	1897	Ryckman, J. H.	1906
Robinson, W. A.	1908		

S.

Sanders, W. K.	1906	Smither, W. J.	1904
Sauer, M. V.	1901	Smithrim, E. R.	1907
Saunders, G. A.	1899	Snaith, W.	1907
Saunders, H. W.	1900	Speller, F. N.	1893
Scheibe, R. R.	1896	Spencer, A. C.	1907
Scheibe, H. M.	1903	Spotton, A. K.	1894
Schofield, C. A.	1907	Squire, R. H.	1893
Scott, W. F.	1897	Stamford, W. L.	1908
Scott, G. S.	1905	Starr, R. H.	1908
Scott, W. A.	1906	Steel, I. J.	1902
Secord, A. O.	1908	Stern, E. W.	1884
Serson, H. V.	1905	Stevenson, W. H.	1901
Seymour, H. L.	1903	Stewart, J. A.	1898
Shanks, T.	1899	Stewart, D. L. N.	1905
Shaw, J. H.	1898	Stewart, M. A.	1905
Shaw, W. E. V.	1908	Stewart, W. M.	1906
Shearer, H. F.	1908	Stewart, G. S.	1907
Sheply, J. D.	1904	Stewart, A. W. J.	1908
Sheppard, A. C. T.	1907	Stiles, J. A.	1907
Shields, J. D.	1894	Stiver, J. L.	1907
Shipley, A. E.	1898	Stock, J. J.	1908
Shirriff, C. H.	1905	St. Lawrence, J.	1908
Silvester, G. E.	1891	Stocking, F. T.	1895
Sinclair, D. (deceased)	1902	Stuart, H. B.	1908
Sisson, C. E.	1905	Stuart, J. L. G.	1908
Slater, F. W.	1904	Stubbs, W. F.	1905
Smallpiece, F. C.	1898	Stull, W. W.	1897
Smart, R. S.	1904	Sturdy, N. H.	1905
Smiley, R. W.	1897	Summers, G. F.	1907
Smith, A. N.	1892	Suteliffe, H. W.	1907
Smith, A.	1894	Sutherland, W. H.	1902
Smith, H. G. (deceased)	1903	Swan, W. G.	1905
Smith, R. W.	1898	Sword, A. D.	1908
Smith, J. H.	1903	Sykes, F. H.	1905
Smith, D. A.	1904	Symmcs, H. D.	1891
Smith, F. R.	1907		

T.

Taylor, T.	1902	Teasdale, C. M.	1902
Taylor, W. V.	1893	Tennant, D. C.	1899
Taylor, A.	1900	Tennant, W. C.	1900
Taylor, J. W. R.	1908	Thomas, V. C.	1908
Taylor, W. E.	1908	Thompson, P. M.	1907

Thomson, T. K.	1886	Townsend, C. J.	1904
Thomson, R. W.	1892	Townsend, D. T.	1904
Thomson, S. E.	1904	Traill, J. J.	1905
Thomson, L. R.	1905	Treadgold, W. M.	1905
Thomson, J. E.	1906	Trees, S. L.	1903
Thomson, O. R.	1907	Tremaine, R. C. C. (dec'd) .	1895
Thomson, L. R.	1907	Trimble, A. V.	1904
Thorne, S. M.	1900	Tucker, B. B.	1904
Thornley, J. H.	1908	Turner, W. E.	1905
Thorold, F. W.	1900	Tye, H. W.	1908
Tillson, E. D.	1905	Tyrrell, J. W.	1883
Toms, C. G.	1908	Tyrrell, H. G.	1886

U.

Umbach, J. E.	1903	Uren, A. E.	1905
--------------------	------	------------------	------

V.

VanEvery, W. W.	1899	Vercoe, H. L.	1898
VanNorman, C. P.	1908	Vickery, C. L.	1906
Vaughan, J. M.	1905	Villeneuve, T. L.	1908

W.

White, W. R.	1908	White, W. J.	1908
Wade, E.	1904	Wickett, T.	1889
Wagner, W. E.	1899	Wiggins, T. H.	1890
Wagner, H. L.	1905	Wilkes, E. D.	1907
Waldron, J.	1903	Wilkinson, T. A.	1898
Walker, E. W.	1904	Williamson, D. A.	1898
Walker, W. J.	1907	Williams, C. G.	1903
Wanless, A. A.	1902	Wilson, R. D.	1901
Wass, S. B.	1903	Wilson, N. D.	1903
Watson, R. B.	1893	Wilson, J. N.	1906
Watson, J. P.	1904	Wilson, A. F.	1907
Watt, G. H.	1899	Wilson, F. D.	1908
Waugh, B.	1908	Wilson, J. M.	1908
Wedlake, R. M.	1908	Wing, D. O.	1908
Weekes, M. B.	1897	Withrow, W. J.	1890
Weir, H. M.	1900	Withrow, F. D.	1900
Weir, J. M.	1904	Wood, E. M.	1906
Weldon, E. A.	1897	Woods, M. H.	1907
Wells, A. F.	1904	Worthington, W. R.	1904
West, A. M.	1908	Wright, C. H. C.	1888
Whelihan, J. A.	1903	Wright, R. T.	1894
White, A. V.	1892	Wright, W. F.	1904
White, H. F.	1903		

Y.

Yeates, E.	1899	Young, W. H.	1905
Young, C. R.	1903	Young, R.	1908

Z.

Zahn, H. J.	1902	Zimmer, A. R.	1907
------------------	------	--------------------	------

THE
CALENDAR

OF THE

University of Toronto



FACULTY OF
APPLIED SCIENCE AND ENGINEERING

1910 - 1911

UNIVERSITY PRESS
TORONTO

CONTENTS.

	PAGE
CALENDARS	6
FACULTY LIST	8
HISTORICAL SKETCH	11
GRADUATING DEPARTMENTS	12
PROFESSIONAL DEGREES	12 & 79
FELLOWSHIPS	12
ADMISSION AND REGISTRATION	13
MATRICULATION.	
GENERAL REGULATIONS	13
EQUIVALENT EXAMINATIONS	14
ADMISSION AD EUNDEM STATUM	16
TUITION FEES, DEPOSITS, ETC.	16
LODGING AND BOARD—RESIDENCES	17
REGULATIONS RESPECTING STUDENTS	18
REGULATIONS RESPECTING EXAMINATIONS.	
REGULAR EXAMINATIONS	18
SUPPLEMENTAL EXAMINATIONS	18
VACATION WORK	18
HONOURS	19
REGULATIONS RESPECTING TERM WORK.	
FIELD WORK	20
DRAFTING ROOMS	20
THESIS	20
EXEMPTIONS	20
REGULAR EXAMINATIONS.	
I. YEAR	21
II. YEAR	22
III. YEAR	23
IV. YEAR	24
DEPARTMENT OF CIVIL ENGINEERING.	
PROSPECTUS	25
TABULAR OUTLINE	25
DEPARTMENT OF MINING ENGINEERING.	
PROSPECTUS	28
TABULAR OUTLINE	28
DEPARTMENT OF MECHANICAL ENGINEERING.	
PROSPECTUS	31
TABULAR OUTLINE	31
DEPARTMENT OF ARCHITECTURE.	
PROSPECTUS	34
TABULAR OUTLINE	34
DEPARTMENT OF ANALYTICAL AND APPLIED CHEMISTRY.	
PROSPECTUS	37
TABULAR OUTLINE	37

DEPARTMENT OF CHEMICAL ENGINEERING.	
PROSPECTUS	39
TABULAR OUTLINE	39
DEPARTMENT OF ELECTRICAL ENGINEERING.	
PROSPECTUS	41
TABULAR OUTLINE	41
OUTLINE OF LECTURE COURSES.	
YEARS I, II, III, IV	44
OUTLINE OF LABORATORY COURSES.	
YEARS I, II, III, IV	66
OUTLINE OF VACATION WORK.	
YEARS II, III,	79
ACTS RESPECTING DOMINION, ONTARIO, MANITOBA AND BRITISH	
COLUMBIA LAND SURVEYORS	80
ONTARIO ARCHITECTS ACT	83
LABORATORY EQUIPMENTS.	
THERMODYNAMIC LABORATORY	84
HYDRAULIC LABORATORY	85
PHYSICAL LABORATORY	87
STRENGTH OF MATERIALS LABORATORY	88
CEMENT TESTING LABORATORY	89
METROLOGICAL LABORATORY	89
ELECTRICAL LABORATORY	90
CHEMICAL LABORATORY	91
GEOLOGICAL AND MINERALOGICAL LABORATORY	91
ASSAYING LABORATORY	92
MILLING AND CONCENTRATING LABORATORY	93
MUSEUM	94
LIBRARY	95
ENGINEERING SOCIETY	96
ELECTRICAL CLUB	96
ATHLETIC CLUBS	97
2ND FIELD CO. OF ENGINEERS	99
GYMNASIUM	99
FACULTY OF APPLIED SCIENCE Y.M.C.A.	100
STUDENTS IN ATTENDANCE	101
PRIZEMEN	109
GRADUATES IN APPLIED SCIENCE	111
" CIVIL ENGINEERING	116
" MINING ENGINEERING	117
" MECHANICAL ENGINEERING	117
" ELECTRICAL ENGINEERING	117
GRADUATES OF SCHOOL OF PRACTICAL SCIENCE	118
CERTIFICATES	171
INDEX TO GRADUATES	172

CALENDAR 1910-1911.

- 1910—Sept. 1 Applications for Registration received.
9 Last day for receiving applications for Supplemental Examinations.
19 Meeting of Faculty Council.
Supplemental Examinations begin.
27 First term begins.
Last day for receiving Vacation Work.
28 President's address to students.
- Oct. 5 Meeting of Engineering Society.
7 Meeting of Faculty Council.
19 Meeting of Engineering Society.
- Nov. 2 Meeting of Engineering Society.
4 Meeting of Faculty Council.
16 Meeting of Engineering Society.
30 Meeting of Engineering Society.
- Dec. 2 Meeting of Faculty Council.
14 Meeting of Engineering Society.
16 First term ends at 1 p.m.
- 1911—Jan. 4 Second term begins.
Last day for receiving Theses for B.A.Sc.
6 Meeting of Faculty Council.
11 Meeting of Engineering Society.
25 Meeting of Engineering Society.
- Feb. 3 Meeting of Faculty Council.
8 Meeting of Engineering Society.
22 Meeting of Engineering Society.
28 Faculty Dinner.
- Mar. 1 Ash Wednesday—Building closed.
3 Meeting of Faculty Council.
8 Meeting of Engineering Society.
10 Annual elections of Engineering Society.
29 Annual meeting of Engineering Society.
- April 7 Meeting of Faculty Council.
10 Lectures and practical work close.
14 Good Friday—Building closed.
15 Annual Examinations begin.
- May 6 Meeting of Faculty Council.
- June 9 Annual Commencement.

The buildings will be closed on all public holidays and daily at noon during July and August.

The University of Toronto

FACULTY OF APPLIED SCIENCE AND ENGINEERING.

President R. A. FALCONER, LL.D., D.LITT.
Dean of Faculty J. GALBRAITH, M.A., LL.D.
Secretary of Faculty A. T. LAING, B.A.Sc.
Bursar F. A. MOURE, Esq.

- F. B. ALLAN, M.A., PH.D., *Associate Professor of Organic Chemistry* 380 Brunswick Ave.
 G. R. ANDERSON, M.A., *Lecturer in Physics*.....505 Euclid Ave.
 R. W. ANGUS, B.A.Sc., *Professor of Mechanical Engineering*.
 42 Howland Ave.
 E. G. R. ARDAGH, B.A.Sc., *Lecturer in Chemistry*.
 Chemistry and Mining Bldg.
 J. W. BAIN, B.A.Sc., *Associate Professor of Applied Chemistry*.
 393 Brunswick Ave.
 ALFRED BAKER, M.A., *Professor of Mathematics*.....81 Madison Ave.
 B. A. BENSLEY, B.A., PH.D., *Associate Professor of Zoology*.
 316 Brunswick Ave.
 M. C. BOSWELL, M.A., PH.D., *Lecturer in Chemistry*.
 100 Dewson St.
 C. A. CHANT, M.A., PH.D., *Associate Professor of Astro-Physics*.
 201 Madison Ave.
 J. R. COCKBURN, B.A.Sc., *Lecturer in Descriptive Geometry*.
 50 Major St.
 A. P. COLEMAN, M.A., PH.D., *Professor of Geology*...476 Huron St.
 S. R. CRERAR, B.A.Sc., *Demonstrator in Surveying*..10 Carling Ave.
 A. T. DELURY, M.A., *Professor of Mathematics*.
 University of Toronto.
 W. HODGSON ELLIS, M.A., M.B., *Professor of Applied Chemistry*.
 74 St. Alban St.
 J. H. FAULL, B.A., PH.D., *Associate Professor of Botany*.
 102 Yorkville Ave.
 J. GALBRAITH, M.A., LL.D., *Professor of Engineering*.
 Chemistry and Mining Bldg.
 P. GILLESPIE, B.A.Sc., A.M. CAN. Soc. C.E., *Lecturer in Applied Mechanics*63 Alexander St.
 W. W. GRAY, B.A.Sc., *Demonstrator in Thermodynamics*.
 Oak Ave., East Toronto.

- H. E. T. HAULTAIN, C.E., M.I.M.M., *Associate Professor of Mining.*
63 Heath St.
- W. J. LOUDON, B.A., *Professor of Mechanics*.....133 Walmer Road.
- J. MCGOWAN, B.A., B.A.Sc., *Associate Professor of Applied Mechanics.*27 McMaster Ave.
- M. A. MACKENZIE, M.A., *Associate Professor of Mathematics.*
1 Bellwoods Park.
- W. L. MILLER, B.A., PH.D., *Professor of Physical Chemistry.*
50 St. Alban St.
- W. A. PARKS, B.A., PH.D., *Associate Professor of Geology.*
69 Albany Ave.
- A. L. PARSONS, B.A., *Lecturer in Mineralogy*...384 Brunswick Ave.
- H. W. PRICE, B.A.Sc., *Lecturer in Electrical Engineering.*
5 Howland Ave.
- M. R. RIDDELL, B.A.Sc., *Lecturer in Mechanical Engineering.*
86 Spadina Road.
- T. R. ROSEBRUGH, M.A., *Professor of Electrical Engineering.*
92 Walmer Road.
- L. B. STEWART, O.L.S., D.T.S., *Professor of Surveying and Geodesy.*
161 Admiral Rd.
- R. B. THOMSON, B. A. *Lecturer in Botany*.....Forestry Bldg.
- J. J. TRAILL, B.A.Sc., *Demonstrator in Hydraulics*...106 Victor Ave.
- W. M. TREADGOLD, B.A., *Lecturer in Surveying.*
University Residence.
- T. L. WALKER, M.A., PH.D., *Professor of Mineralogy and Petrography* 62 Maple Ave.
- C H. C. WRIGHT, B.A.Sc., MEM. O.A.A., *Professor of Architecture.*
419 Markham St.

Sessional Appointments.

- H. G. AKERS, B.A.Sc., *Fellow in Electrochemistry*...447 Jarvis St.
- E. W. BANTING, B.A.Sc., *Demonstrator in Surveying.*
330 St. George St.
- S. BEATTY, B.A., *Fellow in Mathematics*.....43 Robert St.
- C. E. BUSH, B.A.Sc., *Fellow in Surveying*.....285 College St.
- A. V. CHASE, O.L.S., *Fellow in Surveying*.....580 Church St.
- C. S. DUNDASS, B.A.Sc., *Demonstrator in Electrical Engineering.*
349½ Crawford St.
- S. DUSHMAN, B.A., *Lecturer in Electrochemistry*...7 Havelock St.
- F. C. DYER, B.A.Sc., *Demonstrator in Mining*.....37 Avenue Rd.
- W. F. GREEN, B.A., *Demonstrator in Mineralogy*.....22 Robert St.

- W. S. GUEST, B.A.Sc., *Demonstrator in Electrical Engineering.*
30 Grosvenor St.
- C. L. GULLEY, B.A.Sc., *Demonstrator in Electrical Engineering.*
328 Broadview Ave.
- R. E. W. HAGARTY, B.A.Sc., *Demonstrator in Drawing.*
662 Euclid Ave.
- R. H. HOPKINS, B.A.Sc., *Demonstrator in Electrical Engineering.*
73 Jameson Ave.
- A. N. HUNTER, B.A.Sc., *Fellow in Electrical Engineering.*
121 Dovercourt Rd.
- H. M. HYLAND, B.A.Sc., *Fellow in Drawing*.....72 St. Mary St.
- A. E. JOHNS, M.A., *Fellow in Mathematics*.....510 Spadian Ave.
- G. R. JONES, B.A.Sc., *Fellow in Surveying*.....5 Lowther Ave.
- H. P. KEITH, *Fellow in Drawing*.....76 College St.
- A. A. KINGHORN, B.A.Sc., *Demonstrator in Physics*..101 Geoffrey St.
- H. M. LANCASTER, B.A.Sc., *Demonstrator in Chemistry.*
134 Huron St.
- J. M. LANGSTAFF, *Lecturer in Accountancy*.....666 Bathurst St.
- J. N. M. LESLIE, B.A.Sc., *Fellow in Electrical Engineering.*
8 Lowther Ave.
- T. R. LOUDON, B.A.Sc., A.M. CAN. Soc. C.E., *Lecturer in Metallurgy*133 Walmer Rd.
- A. W. MCCONNELL, B.A.Sc., *Lecturer in Architecture*.....
327 Rusholme Rd.
- J. G. MACKINNON, *Fellow in Drawing*.....30 Huntley St.
- N. MADGE, *Fellow in Chemistry*31 Wood St.
- R. J. MARSHALL, B.A.Sc., *Demonstrator in Applied Mechanics.*
34 Macdonnell Ave.
- A. B. MITCHELL, *Fellow in Drawing*.....59 Concord Ave.
- R. W. MOFFATT, B.A.Sc., *Demonstrator in Drawing*
345½ Markham St.
- F. H. MOODY, B.A.Sc., *Demonstrator in Thermodynamics.*
27 Rose Ave.
- P. W. MUELLER, B.A., *Instructor in German*....96 Warren Road.
- W. P. MURRAY, B.A.Sc., *Fellow in Drawing*.....376 Bathurst St.
- R. E. K. NEELANDS, B.A.Sc., *Fellow in Drawing*.....33 Cecil St.
- L. S. ODELL, *Fellow in Drawing*.....5 Henry St.
- M. PEQUEGNAT, B.A.Sc., *Demonstrator in Drawing*..631 Church St.
- R. B. POTTER, *Fellow in Physics*.....268 Simcoe St.
- L. V. REDMAN, B.A., *Fellow in Electrochemistry*..Trinity College.
- L. J. ROGERS, *Fellow in Chemistry*.....55 Madison Ave.
- G. S. SCOTT, *Fellow in Geology*.....50 Henry St.
- W. SNAITH, *Fellow in Drawing*.....493 Brunswick Ave.
- R. B. STEWART, M.A., *Demonstrator in Mining*...175 McCaul St.

- W. G. SWAN, B.A.Sc., *Demonstrator in Applied Mechanics.*
Nanton Apartments, Rosedale.
- V. C. THOMAS, B.A.Sc., *Demonstrator in Hydraulics.*
28 Langley Ave.
- L. R. THOMSON, B.A.Sc., *Demonstrator in Drawing.*
244 Bloor St. W.
- M. H. WOODS, *Fellow in Drawing*.....72 Oxford St.
- C. R. YOUNG, B.A.Sc., A.M. Can Soc. C.E., *Lecturer in Applied
Mechanics*113 Winchester St.
- A. R. ZIMMER, B.A.Sc., *Demonstrator in Electrical Engineering.*
38 Delaware.

FACULTY OF APPLIED SCIENCE AND ENGINEERING.**Historical Sketch.**

The Legislative Assembly during the Session of 1877 gave its sanction to the establishment of a School of Practical Science on the basis proposed in the memorandum of the Minister of Education confirmed by the Lieutenant-Governor in Council on the 3rd day of February, 1877.

By the scheme thus approved of, the Government effected an arrangement with the Council of University College whereby the students of the School of Practical Science enjoyed full advantage of the instruction given by its professors and lecturers in all the departments of science which were embraced in the work of the School.

This arrangement was brought to an end in 1889 by the transfer of the department of science above referred to, from University College to the University of Toronto under the operation of the University Federation Act.

In order that the students of the School might continue to enjoy the advantage of the instruction of the above departments, the Senate of the University of Toronto passed a Statute in October, 1889, affiliating the School to the University, which Statute was confirmed by the Lieutenant-Governor on the 30th day of October, 1889.

By an Order-in-Council, approved by the Lieutenant-Governor, on the 6th day of November, 1889, a Principal was appointed, and the management of the School was entrusted to a council composed of the Principal as chairman, and the Professors, Lecturers and Demonstrators appointed on the Teaching Faculty of the School.

By the terms of this order the management and discipline of the School was vested in the Council.

By a Statute of the Senate of the University of Toronto, passed on December 14th, 1900, the teaching staff and examiners of the School of Practical Science, together with the examiners for the degree of B.A.Sc., and professional degree in Engineering, were constituted ex-officio the Faculty of Applied Science and Engineering of the University of Toronto.

By an Order-in-Council dated the 30th day of January, 1903, the Council of the School was made to consist of the Principal, the Professors and Lecturers, together with the Registrar.

By the University Act, 1906, the School of Practical Science was united to the University of Toronto as its Faculty of Applied Science and Engineering.

GRADUATING DEPARTMENTS.

There are seven regular Departments of Instruction:—

1. Civil Engineering.
2. Mining Engineering.
3. Mechanical Engineering.
4. Architecture.
5. Analytical and Applied Chemistry.
6. Chemical Engineering.
7. Electrical Engineering.

leading to the degree of Bachelor of Applied Science. The instruction given in these departments extends over a period of four years and is designed to give the student a thorough knowledge of the scientific principles underlying the practice in the several professions, and also such a training as may make him immediately useful when he commences professional work.

PROFESSIONAL DEGREES.

Bachelors of Applied Science may, after three years spent in professional work, present themselves for the degrees of Civil Engineer (C.E.), Mining Engineer (M.E.), Mechanical Engineer (M.E.), Electrical Engineer (E.E.), or Chemical Engineer (Chem.E.), as the case may be, subject to the rules and regulations established by the University. (See page 79).

FELLOWSHIPS.

Sessional Fellowships of the value of \$500 each are awarded annually in the various departments.

The Fellows are required to take such portions of the work of instruction as may be assigned to them by the Council.

Applications for these fellowships are to be made annually in writing to the Secretary of the Faculty on or before the 1st day of May.

ADMISSION AND REGISTRATION.

Candidates will be admitted as undergraduate students in any of the regular departments of instruction on presenting certificates of having passed the Junior or Senior Matriculation examination or its equivalent as defined hereafter. (See page 14.)

The matriculation requirements of this Faculty are based upon the prescription for Junior Matriculation and are as follows:—

1910: English, History, Mathematics and any two of the following, viz., Greek, Latin, French, German, Experimental Science.

1911: English, History, Mathematics and any three of the following, viz., Greek, Latin, French, German, Experimental Science. A candidate who has obtained Honours in Mathematics need pass in only two of the optional subjects.

1912: The same prescription, except that pass standing in Honour Mathematics may be required.

Applications for admission and registration in the various years will be received on and after Sept. 1st. Application forms will be supplied on request, by the Secretary.

JUNIOR MATRICULATION.

GENERAL REGULATIONS.

Candidates for Junior Matriculation must produce satisfactory certificates of good character and of having completed the sixteenth year of their age.

The subjects of Junior Matriculation are as follows:—Latin, English, History, Mathematics and any two of the following: Greek, German, French, Experimental Science.

Pass and honour papers will be set in each of these subjects.

The pass papers are as follows:—Latin authors, Latin Composition; English grammar, English composition, English literature; History; Arithmetic, Algebra, Plane Geometry; Greek authors, Greek composition; German authors, German composition; French authors, French composition; Experimental Science.

The pass standard is forty per cent. of the marks assigned to a paper, with such modification or exceptions as may be deemed proper in consideration of the total number of marks and the confidential reports of the Principal. In 1911 the pass standard will be forty per cent. of the marks assigned to a paper with an average of fifty per cent.; in 1912 the pass standard will be forty per cent. of the marks assigned to a paper with an average of sixty per cent.—the standard for Normal School Entrance.

In 1910 a candidate who failed to obtain pass standing in not more than three papers, may complete Junior Matriculation by passing in these papers at any one subsequent examination. A candidate in 1911 or 1912 who has obtained the average of fifty per cent. or sixty per cent. respectively on all the papers but has failed to obtain forty per cent. in one or two or at most three of these papers may complete Junior Matriculation by passing on these papers at any one subsequent examination.

Further particulars may be obtained on application to the Registrar for curriculum for Junior Matriculation.

Candidates who obtained, prior to 1910, pass standing in at least a majority of the subjects may complete Junior Matriculation by passing in the remaining subjects at a subsequent examination or examinations.

The examination for pass and honour Junior Matriculation is held annually in July at centres in Ontario, and, if application is made to the Senate, the examination may, with the co-operation of the Department of Education, be held at centres outside Ontario.

Applications accompanied by the fee of \$5.00 must be sent not later than the 24th of May to the local Public School Inspector, or in the case of candidates intending to write at the University, to the Registrar.

A Junior Matriculation examination, at which no honour papers are set, will be held in September at the University and at such other centres as may from time to time be authorized. Candidates entitled to the privileges of supplemental examinations as well as new candidates, may present themselves at this examination. Applications must be sent to the Registrar not later than the 1st of September.

EQUIVALENT EXAMINATIONS.

A person who has passed the matriculation examination of another University may be admitted *ad eundem statum* on such conditions as the Senate, on application, may prescribe.

The local examinations conducted by the University of Oxford and Cambridge are accepted *pro tanto*.

Certificates of having passed the whole, or all but one, two or three papers of those common to the matriculation and other examination of any of the following examinations will be accepted *pro tanto*.

Province of Ontario.

The Junior and Senior Teachers' examinations, or examinations of the same standard under other names.

Province of Quebec.

The Associate in Arts examination.

Province of New Brunswick.

The examinations for Superior and Grammar School Licenses.

Province of Nova Scotia.

The Junior and Senior Leaving examinations (Grades XI. and XII.).

Province of Manitoba.

The Second Class Teachers' examination.

Province of British Columbia.

The Intermediate and Senior Grade examination.

Province of Prince Edward Island.

The First Class Teachers' License examination.

Province of Alberta.

The Standard VII. and VIII. examinations.

Province of Saskatchewan.

The Standard VII. and VIII. examinations.

Newfoundland.

Intermediate and Associate Grade examinations.

Candidates whose certificates do not cover all the subjects may complete matriculation by passing in the remaining subjects as prescribed by the University, or by passing in the subjects of similar standard as prescribed by the Education Department of the Province by which the certificate was issued.

Other Certificates.

The Senate will consider applications for the recognition of certificates other than those mentioned, as occasion may require.

ADMISSION AD EUNDEM STATUM.

An undergraduate of another University may be admitted *ad eundem statum* on such conditions as the Senate on the recommendation of the Council of the Faculty may prescribe.

An applicant for admission *ad eundem statum* must submit with his petition (1) a calendar of his University giving a full statement of the courses of instruction; (2) an official certificate of character and academic standing.

FEEES.

All fees are payable at the Bursar's office between the hours 10 a.m. and 1 p.m. of each week day except Saturday.

The annual fees including tuition, library, laboratory supplies and one annual examination shall be as follows:—

First Year.

If paid in full on or before November 5th.....\$100.00

By instalments:

First instalment, if paid on or before November 5th. 50.00

Second instalment, if paid on or before February 5th. 55.00

Second Year.

If paid in full on or before November 5th.....110.00

By instalments:

First instalment, if paid on or before November 5th. 55.00

Second instalment, if paid on or before February 5th. 60.00

Third and Fourth Years.

If paid in full on or before November 5th.....120.00

By instalments:

First instalment, if paid on or before November 5th. 60.00

Second instalment, if paid on or before February 5th. 65.00

The above fees are payable in advance. After November 5th a penalty of \$1.00 per month will be imposed until the whole amount is paid. In the case of payment by instalments the same rule as to penalty will apply.

General Fees.

Matriculation, or registration of Matriculation.....	\$ 5.00
Supplemental examination	10.00
Admission ad eundem statum	10.00
Degree of B.A.Sc. (Payable not later than April 1st)	10.00

Dues and Deposits.

(Payable to the Secretary of the Faculty at the time of registration.)

Engineering Society membership	\$1.00
Annual deposit	2.00

Charges for waste, neglect and breakage are to be met out of the deposit fee, the balance of which will be refunded to the student at the end of the session.

LODGING AND BOARD.

Accommodation is readily obtainable in numerous private boarding-houses within convenient distance of the University, at a cost of from four dollars and a half a week upwards for comfortable lodging with board; or rooms may be rented at a cost from one dollar and a half per week upwards, and board obtained separately at moderate rates. A list of accredited boarding-houses is kept by the Secretary of the University Young Men's Christian Association, and students are recommended to consult him with reference to the selection of suitable accommodation.

UNIVERSITY RESIDENCES.

The attention of students is directed to the accommodation which has been provided in the new residences situated within the University grounds. These residences will accommodate in all about one hundred and fifty men. Every reasonable comfort is supplied.

The room rental varies from two dollars to three dollars per week, and suitable board may be conveniently obtained at the University Dining Hall at three dollars per week.

The residences and dining hall are under University management.

Applications for rooms should be made in writing to the Registrar of the University at as early a date as possible.

REGULATIONS RESPECTING STUDENTS.

No student will be enrolled in any year, or be allowed to continue in attendance, whose presence for any cause is deemed by the Council to be prejudicial to the interests of the University.

All interference on the part of any student with the personal liberty of another, by arresting him, or summoning him to appear before any tribunal of students, or otherwise subjecting him to any indignity or personal violence, is forbidden by the Council. In particular, students of all Faculties are warned against the practices known as the "hustling" of freshmen and against inter-year or inter-faculty "hustles." Any student convicted of participation in such proceedings will render himself liable to expulsion from the University.

All students shall be in attendance during the whole of each term, unless exempted by special permission of the Council.

A student who in either term of the session, fails to perform the work of his course in a manner satisfactory to the professors in charge, will not be allowed to present himself at the final examinations of the year except by special permission of the Council.

Information as to the text books, instruments and materials to be purchased by the students will be given on registration at the beginning of the session.

REGULATIONS RESPECTING EXAMINATIONS.

Regular Examinations.

Candidates are required to send to the Secretary of the Faculty at least three weeks before the commencement of the Annual Examinations in April, notice in writing of their intention to take such examinations.

No student will be allowed to write at the Annual Examinations who has not paid all fees and dues for which he is liable.

The minimum percentage of marks required to pass in the written examinations will be fixed from time to time by the Council.

The minimum percentage of marks required to pass in the practical work connected with any subject shall be one and one-half times the minimum required in the case of a written examination.

In order to pass the practical examinations in the subjects of applied mechanics, descriptive geometry, electrical design, optics, surveying and architecture, the drawings set in these subjects must be made.

Candidates who fail in passing the Annual Examinations will be required to take again the whole course of instruction, both theoretical and practical, of the year in which they fail before presenting themselves a second time for examination.

Supplemental Examinations.

A candidate who fails in one or two subjects at the annual examinations, will be required to take supplemental examinations in such subjects.

The supplemental written examinations will begin on the 19th of September, 1910.

Candidates are required to send to the Secretary of the Faculty at least ten days before the commencement of the Supplemental Examinations in September, notice in writing of their intention to take such examinations, and to remit to the Bursar the fee of \$10.00.

In the case where a candidate fails to pass a supplemental examination it will count as one of the two supplemental examinations which may be allowed him after the next annual examination.

Vacation Work.

Vacation work must be handed in, on or before the first day of the session.

Vacation notes must be on construction only, except in Department 2 (see p. 79), and contain not less than twenty, nor more than thirty pages of sketches. These sketches must be free-hand pencil drawings with figured dimensions.

No notes, whether taken during the session or the vacation will be counted unless made in the standard note books of the Faculty.

The minimum percentage of marks required for practical work must be made in the case of vacation notes.

Honours.

Honours will be granted in each department to the students who pass in all the subjects and obtain at least 66 per cent. of the total number of marks allotted to the department at the annual examinations.

Papers read before the Engineering Society may be considered in granting Honours.

REGULATIONS RESPECTING TERM WORK.

Students working in any laboratory must be governed by the regulations relating thereto as made known from time to time.

No laboratory reports or drawings may be removed from the laboratories without permission. The Council reserves the right to dispose of them as may be thought proper.

Field Work.

No field notes will be counted which have not been taken in the field, and during the hours allotted to such work.

Students taking practical astronomy are required to take observations in the field for time, latitude, and azimuth.

Drafting Rooms.

Drawings prescribed for the first term of the session will not be counted unless finished in that term.

The minimum number of drawings shall be twenty-five, and the maximum number thirty-five, except in the Department of Analytical and Applied Chemistry, in which the number shall be fifteen and twenty-five respectively.

No drawings will be counted which have not been made in the drafting rooms, and during the hours allotted to such work.

Theses.

In the Fourth Year each student is required to prepare a thesis on a subject approved by the Council. Except in cases where the Council gives permission to the contrary before the thesis is begun, the title of the thesis must be sent to the Council for approval before the regular meeting in November. The completed thesis must be handed to the Secretary of the Faculty not later than the first day of the second term and shall become the property of the University. Applications for extension of time beyond the date given must be made to the Council before the regular meeting in December.

EXEMPTIONS.

Applications for exemption from any of the regulations must be made to the Council in writing and the particulars of the case fully stated.

REGULAR EXAMINATIONS.

(APPROXIMATE LIST.)

I. YEAR.**Examinations Held at the End of the Session.**

Algebra	1,2,3,4,5,6,7.	Elementary Chemistry	
Plane Trigonometry	1,2,3,4,5,6,7.		1,2,3,4,5,6,7.
Analytical Geometry		Inorganic Chemistry	.....5,6.
	1,2,3,4,5,6,7.	History and Principles of	
Descriptive Geometry		Architecture	.....4.
	1,2,3,4,6,7.	Elementary Mineralogy	.....5.
Surveying	1,2,4.	French or German	.....1,2,3,7.
Statics	1,2,3,4,6,7.	French	4.
Dynamics	1,2,3,6,7.	German	5,6.
Electricity and Magnetism		Accounts	.....1,2,3,4,5,6,7.
	3,5,6,7.	Biology	.....5.
Electric Circuits	.....3,5,6,7.		

Examinations Held During the Session.

Drawing	1,2,3,4,5,6,7.
Surveying	1,2,4.
Architectural Sketches	.....4.
Experimental Electricity	.....3,5,6,7.
Practical Chemistry	.....2,5,6.
Mineralogy	5.
Biology	5.

- | | |
|----------------------------|--------------------------------------|
| 1. Civil Engineering. | 5. Analytical and Applied Chemistry. |
| 2. Mining Engineering. | 6. Chemical Engineering. |
| 3. Mechanical Engineering. | 7. Electrical Engineering. |
| 4. Architecture. | |

II. YEAR.**Examinations Held at the End of the Session.**

Calculus	1,2,3,4,(5),6,7.	Analytical Chemistry	5.
Spherical Trigonometry.....	1.	Industrial "	5,6.
Astronomy	1.	Optics	1,2,3,4,5,6,7.
Descriptive Geometry	1,2,3,4,6,7.	Hydrostatics	1,2,3,4,5,6,7.
Surveying	1,2,4.	Architectural Design	4.
Dynamics of Rotation ...	1,2,3,7.	History of Architecture	4.
Theory of Mechanism	3,7.	Orders of Architecture	4.
Steam Engine	3,7.	History of Ornament	4.
Strength of Materials	1,2,3,4,6,7.	Mineralogy	1,2.
Electricity	3,5,6,7.	Geology	2,5.
Engineering Chemistry	1,2,3,4,5,6,7.	French or German	1,2,3,7.
Organic Chemistry	1,2,3,4,7.	French	4.
Organic "	5,6.	German	5,6.
Inorganic "	2,5,6.	Banking and Finance	1,2,3,4,5,6,7.
Physical "	5,6.	Biology	(5).
		Mining	2.
		Metallurgy	2.

Examinations Held During the Session.

Drawing	1,2,3,4,6,7.
Surveying	1,2,4.
Construction Notes	1,2,3,4,5,6,7.
Architectural Sketches	4.
Architectural Design	4.
Experimental Optics	1,2,3,4,5,6,7.
Experimental Hydrostatics	1,2,3,4,5,6,7.
Experimental Electricity	3,5,6,7.
Practical Chemistry	1,2,3,4,7.
Practical Chemistry (Quantitative)	2,5,6.
Mineralogy	1,2,5.
Biology	5.
Mining and Ore Dressing	2.

III. YEAR.

Examinations Held at the End of the Session.

Descriptive Geometry	1,4.	Mining	2.
Astronomy and Geodesy	1.	Ore Dressing	2.
Surveying and Levelling	1,2.	Assaying	2.
Method of Least Squares	1.	Architectural Design	4.
Theory of Construction.....	1,2,3,4.	History of Architecture	4.
Hydraulics	1,2,3,6,7.	History of Ornament.....	4.
Thermodynamics	3,6,7.	Building Materials	4.
Heat Engines	3.	Cements and Concrete	1,4.
Mechanics of Machinery	3,7.	Design of Tall Buildings.....	4.
Machine Design	3,7.	Acoustics	4.
Electricity	2,	Engineering Chemistry	
Magnetism and Electricity			1,2,3,5,6,7.
	3,6,7.	Industrial Chemistry	5,6.
Alternating Current	7.	Analytical "	2,6.
Electrical Design	7.	Organic "	5,6.
Geology	1,2,5.	Electrochemistry	5,6,7.
Crystallography	5.	Chemical Plant	5,6.
Elementary Petrography	2.	Limited Companies.	
Ore Deposits	2.		1,2,3,4,5,6,7.
Ferro-Metallurgy ...	1,2,3,5,6,7.	German	5,6.
Metallurgy	2.		

Examinations Held During the Session.

Drawing	1,2,3,4,6,7.
Surveying	1,2.
Strength of Materials	1,3,4.
Astronomy and Geodesy	1.
Photography	1,3,4,7.
Hydraulics	1.
Heat	1,4,5,6.
Chemistry	2,5,6.
Mineralogy	2.
Geology	2.
Assaying	2,5.
Electricity	3,6,7.
Mechanical Laboratory	3,6,7.
Electrochemistry	5,6,7.
Acoustics	4.
Architectural Sketches	4.
Architectural Design	4.
Crystallography	5.
Construction Notes	1,2,3,4,5,6,7.
Mining and Ore Dressing	2.

IV. YEAR.

Examinations Held at the End of the Session.

(DEPENDENT UPON THE SELECTED OPTIONS.)

Retaining Walls, Foundations and Dams.	Alternating Current.
Thermodynamics.	Applied Electricity.
Hydraulics.	Electrochemistry.
Astronomy and Geodesy.	Electrometallurgy.
Railway Engineering.	Heating and Ventilating.
Geology.	Architectural Design.
Mineralogy.	Industrial Chemistry.
Metallurgy.	Organic Chemistry.
Mining.	Industrial Chemistry.
Assaying.	Sanitary and Forensic Chemistry.
Ore Dressing.	Sanitary Chemistry and Bacteri- ology.
Machine Design.	Contracts and Specifications.
Mill Building Design.	Cost Keeping.
Strength of Materials.	
Electricity.	

Examinations held during the Session.

Thesis.	Laboratory Course on Options Selected.
---------	---

DEPARTMENT OF CIVIL ENGINEERING.**Department 1.**

The courses of study in Civil Engineering are designed to give the student a sound training in the fundamental scientific principles on which the practice of the profession is based. The instruction is given by means of lectures and practical work in the field, the drafting room and the laboratory. In this way the student is led to apply the principles developed in the class room.

Formerly the term Civil Engineering included all the branches of the profession, but some of these became so extensive as to acquire distinctive names and fields of work for themselves. Even yet Civil Engineering is so comprehensive as to render it impossible for anyone to master all its branches. It may be said to include surveying and topography; works connected with transportation, such as railroads and canals; municipal works, such as waterworks, sewers, streets and pavements; hydraulic works, such as power development, drainage, irrigation, etc.; structural works, such as bridges, roofs, etc.

Notwithstanding the variety of the branches of Civil Engineering above enumerated, they are underlaid by a comparatively compact body of scientific principles which form the basis of the work of instruction. While the subjects of the first year are largely fundamental, an effort is made, it is thought successfully, to give a professional aspect to the student's work from the very beginning. This is accomplished by the introduction of such subjects as field work and plotting in the curriculum of the first year. In the second and third years the study of fundamental science is continued together with its application to the solution of engineering problems. In the fourth year the student may elect to follow certain optional subjects, which form a continuation of the work of the previous years. Here special stress is laid upon experimental work in the laboratory.

SUBJECTS OF INSTRUCTION.**I. YEAR.****LECTURE COURSES.**

	PAGE.		PAGE.
Algebra	54	Statics	59
Plane Trigonometry	55	Dynamics	56
Analytical Geometry	54	Elementary Chemistry	48
Descriptive Geometry	50	French or German	63
Surveying	64	Accounts	47

LABORATORY COURSES.

	PAGE.		PAGE.
Drawing	69	Surveying	77

II. YEAR.

(1910-1911 AND THEREAFTER.)

LECTURE COURSES.

	PAGE.		PAGE.
Calculus	55	Optics	64
Spherical Trigonometry	55	Hydrostatics	64
Elementary Astronomy	46	Engineering Chemistry	48
Descriptive Geometry	51	Organic "	49
Surveying	65	Mineralogy	62
Dynamics of Rotation	56	Banking & Finance	47
Strength of Materials	59	French or German	63

LABORATORY COURSES.

	PAGE.		PAGE.
Drawing	70	Hydrostatics	76
Surveying	77	Chemistry	67
Optics	76	Mineralogy	75

VACATION WORK.

Construction Notes, see page 79.

III. YEAR.

(1911-1912 AND THEREAFTER.)

LECTURE COURSES.

	PAGE.		PAGE.
Least Squares	55	Ferro-Metallurgy	63
Practical Astronomy & Geod- esy	46	Theory of Construction	60
Surveying and Levelling	65	Cements & Concrete	55
Descriptive Geometry	51	Engineering Chemistry	48
Hydraulics	57	Geology	53
		Limited Companies	47

LABORATORY COURSES.

	PAGE.		PAGE.
Drawing	70	Heat	76
Surveying	78	Strength of Materials	73
Photography	77	Hydraulics	72
Astronomy & Geodesy	66		

VACATION WORK.

Construction Notes, see page 79.

IV. YEAR.

(1912-1913 AND THEREAFTER.)

LECTURE COURSES.

	PAGE.		PAGE.
Retaining Walls, Founda- tions & Dams	56	And Astronomy & Geodesy ...	46
Electricity	52	or two of the following:	
Thermodynamics	60	(b) Hydraulics	57
Economic Geology	53	(c) Strength of Materials ...	59
Contracts & Specifications ...	47	(e) Railway Engineering	64
		(k) Sanitary Chemistry & Bacteriology	50

LABORATORY COURSES.

According to option selected. Thesis 21

DEPARTMENT OF MINING ENGINEERING.**Department 2.**

The course in Mining Engineering is intended to serve as a preliminary training for those who expect to practice the art of mining or metallurgy. In the first two years it differs very little from the course in civil engineering, in the third year some subjects peculiar to mining and metallurgy are taken up. In the fourth year the subjects are more particularly those of mining and metallurgy. By the choice of subject for thesis in the fourth year the student can follow his particular branch still further, and devote about one-quarter of the time in that year to the part of the studies which interests him most.

In general this course is designed to first give the student a good training in the parts of engineering essential to all branches such as surveying, drafting, etc., and then in the upper years to allow him to follow studies peculiar to mining engineering.

Candidates for the degree in this department will be required to present satisfactory evidence of having had at least six months' practical experience in work connected with mining, metallurgy or geology, for which they must have received regular wages. Certificate forms, giving full details as to acceptable classes of work, will be furnished on application and should be obtained by all students before entering employment.

SUBJECTS OF INSTRUCTION.**I. YEAR.****LECTURE COURSES.**

	PAGE.		PAGE.
Algebra	54	Statics	59
Plane Trigonometry	55	Dynamics	56
Analytical Geometry	54	Elementary Chemistry	48
Descriptive Geometry	50	French or German	63
Surveying	64	Accounts	47

LABORATORY COURSES.

	PAGE.		PAGE.
Drawing	69	Chemistry	67
Surveying	77		

II. YEAR.

(1910-1911 AND THEREAFTER.)

LECTURE COURSES.

	PAGE.		PAGE.
Calculus	55	Organic Chemistry	49
Descriptive Geometry	51	Engineering "	48
Surveying	65	Mineralogy	62
Dynamics of Rotation	56	Geology	53
Strength of Materials	59	Mining	62
Optics	64	Metallurgy	63
Hydrostatics	64	French or German	63
Inorganic Chemistry	49	Banking & Finance	47

LABORATORY COURSES.

	PAGE.		PAGE.
Drawing	70	Chemistry	67
Surveying	77	Mineralogy	75
Optics	76	Mining & Ore Dressing	76
Hydrostatics	76		

VACATION WORK.

Construction Notes, see page 79.

III. YEAR.

(1911-1912 AND THEREAFTER.)

LECTURE COURSES.

	PAGE.		PAGE.
Surveying and Levelling	65	Economic Geology	53
Theory of Construction	60	Ore Deposits	53
Hydraulics	57	Mining	62
Electricity	52	Ore Dressing	63
Engineering Chemistry	48	Ferro-Metallurgy	63
Analytical "	48	Metallurgy (non-ferrous	
Assaying	66	metals)	63
Petrography	62	Limited Companies	47

LABORATORY COURSES.

	PAGE.		PAGE.
Drawing	70	Mineralogy	75
Surveying	78	Geology	72
Chemistry	68	Mining and Metallurgy	76
Assaying	66		

VACATION WORK.

Construction Notes, see page 79.

IV. YEAR.

(1912-1913 AND THEREAFTER.)

LECTURE COURSES.

	PAGE.		PAGE.
Thermodynamics	61	Geology, Mining	54
Electrochemistry	48	Mining	63
Assaying	66	Ore Dressing	63
Petrography	62	Metallurgy	63
Geology, Archaean & Glacial	53	Cost-Keeping, etc.	47

LABORATORY COURSES.

	PAGE.		PAGE.
Chemistry	68	Metallurgy	76
Assaying	66	Power	72
Petrography	75	Design	76
Geological Excursions	72	Thesis	21
Milling	76		

DEPARTMENT OF MECHANICAL ENGINEERING.**Department 3.**

The course in this Department is designed to meet the needs of those students who are intending to take up the work connected with Mechanical Engineering such as: the design of gas engines, steam engines, steam boilers, steam turbines, air compressors, etc.; the design and installation of the machinery connected with power plants and central stations, steam piping and other similar problems. The work is also so arranged that the student becomes somewhat familiar with the design of travelling cranes and mill buildings and similar problems connected with structural steel work.

Since the work of the mechanical engineer and of the electrical engineer are closely allied, the courses in these two departments in the first two years are identical and cover the subjects mentioned below.

In the third year the work becomes more specialized, the mechanical engineers paying more attention to heat engines of various types, and to mill building design and other work of similar nature. The study of electricity is continued and the student gets considerable practice in the mechanical and electrical laboratories.

In the fourth year the student devotes himself still more closely to his chosen work, placing the greater stress on thermodynamics and the theory and testing of heat engines, and problems in machine design. Much time is spent in the mechanical laboratories testing gas and steam engines and other machines. A portion of the time is devoted to electricity and the laboratory connected therewith.

Candidates for the degree in this department will be required to present satisfactory evidence of having had at least eight months' practical experience in one of the principal trades connected with Mechanical Engineering. The object being that graduates may have some practical knowledge of the duties of the workman in this branch of engineering, as distinguished from those of the purely technical man. Certificate forms will be furnished on application. These forms contain full details in regard to the work required.

SUBJECTS OF INSTRUCTION.**I. YEAR.****LECTURE COURSES.**

	PAGE.		PAGE.
Algebra	54	Statics	59
Plane Trigonometry	55	Dynamics	56
Analytical Geometry	54	Magnetism & Electricity	51
Descriptive Geometry	50	Electric Circuits	51
French or German	63	Elementary Chemistry	48
Accounts	47		

LABORATORY COURSES.

	PAGE.		PAGE.
Drawing	69	Electricity	71

II. YEAR.

(1910-1911 AND THEREAFTER.)

LECTURE COURSES.

	PAGE.		PAGE.
Calculus	55	Hydrostatics	64
Descriptive Geometry	51	Electricity	52
Dynamics of Rotation	56	Engineering Chemistry	48
Theory of Mechanism	60	Organic "	49
Steam Engines	59	Banking & Finance	47
Strength of Materials	59	French or German	63
Optics	64		

LABORATORY COURSES.

	PAGE.		PAGE.
Drawing	70	Electricity	71
Optics	76	Chemistry	67
Hydrostatics	76		

VACATION WORK.

Construction Notes, see page 71.

III. YEAR.

(1911-1912 AND THEREAFTER.)

LECTURE COURSES.

	PAGE.		PAGE.
Mechanics of Machinery	58	Ferro-Metallurgy	63
Machine Design	58	Magnetism & Electricity	52
Thermodynamics	60	Alternating Current	52
Heat Engines	57	Engineering Chemistry	48
Hydraulics	57	Limited Companies	47
Theory of Construction	60		

LABORATORY COURSES.

	PAGE.		PAGE.
Drawing	70	Strength of Materials	73
Electricity	71	Machine Design	73
Photography	77	Thermodynamics	74
Hydraulics	72		

VACATION WORK.

Construction Notes, see page 79.

IV. YEAR.

(1912-1913 AND THEREAFTER.)

LECTURE COURSES.

	PAGE.		PAGE.
Mill Building Design	58	And two of the following:	
Cost-keeping, etc.	47	(b) Hydraulics	57
Machine Design	58	(c) Strength of Materials ...	59
		(d) Thermodynamics	61

LABORATORY COURSES.

	PAGE.		PAGE.
Machine Design	73	Thesis, see page	21
Mill Design, Electricity and selected option.			

DEPARTMENT OF ARCHITECTURE.

Department 4.

The instruction in this department is arranged to lay a broad foundation for the subsequent professional life of its graduates, and incidentally, to prepare its students to be immediately useful in an architect's office. The curriculum has been arranged to meet the æsthetic and scientific needs of the profession, and includes History and Principles of Architecture, Freehand Drawing in pencil, ink and color, Architectural Design, Analysis and Criticism of Buildings, Mathematics, Statics, Strength and Elasticity of Materials, Theory of Construction and Heating and Ventilation.

The equipment of the department includes a working library of 1,000 volumes, a large file of periodicals, 2,500 photographs, 2,000 stereographic photos, 4,500 lantern slides, and a large collection of models and casts.

SUBJECTS OF INSTRUCTION.

I. YEAR.

LECTURE COURSES.

	PAGE.		PAGE.
Algebra	54	Elementary Chemistry	48
Plane Trigonometry	55	History & Principles of Arch-	
Analytical Geometry	54	itecture	44
Descriptive Geometry	50	French	63
Surveying	64	Accounts	47
Statics	59		

LABORATORY COURSES.

	PAGE.		PAGE.
Drawing	69	Architectural Sketching	66
Surveying	77		

II. YEAR.

(1910-1911 AND THEREAFTER.)

LECTURE COURSES.

	PAGE.		PAGE.
Calculus	55	Hydrostatics	76
Descriptive Geometry	51	Architectural Design	44
Surveying	65	History of Architecture	44
Strength of Materials	59	Orders of Architecture	44
Engineering Chemistry	48	History of Ornament	44
Organic "	49	French	63
Optics	76	Banking & Finance	47

LABORATORY COURSES.

	PAGE.		PAGE.
Drawing	70	Chemistry	67
Surveying	71	Architectural Design	45
Optics	76	Architectural Sketching	66
Hydrostatics	76		

VACATION WORK.

Construction Notes, see page 79.

III. YEAR.

(1911-1912 AND THEREAFTER.)

LECTURE COURSES.

	PAGE.		PAGE.
Descriptive Geometry	51	Building Materials	45
Acoustics	64	Design of Tall Buildings	45
History of Architecture	45	Theory of Construction	60
History & Principles of Orna- ment	45	Cements & Concrete	55
Architectural Design	45	Limited Companies	47

LABORATORY COURSES.

	PAGE.		PAGE.
Drawing	70	Acoustics	76
Architectural Sketching	66	Architectural Design	45
Heat	76	Photography	77
Strength of Materials	73		

VACATION WORK.

Construction Notes, see page 79.

IV. YEAR.

(1912-1913 AND THEREAFTER.)

LECTURE COURSES.

	PAGE.		PAGE.
Strength of Materials	59	Sanitary Science	45
Electricity	52	Architectural Design	45
Heating & Ventilation	45	Contracts & Specifications ...	47

LABORATORY COURSES.

	PAGE.		PAGE.
Strength of Materials	59	Thesis	21
Architectural Design	45		

DEPARTMENT OF ANALYTICAL AND APPLIED CHEMISTRY.

Department 5.

The course in Analytical and Applied Chemistry is designed to furnish instruction suitable for those students who intend to practice chemistry as a profession, either as analysts or as works chemists.

SUBJECTS OF INSTRUCTION.

I. YEAR.

LECTURE COURSES.

	PAGE.		PAGE.
Algebra	54	Electric Circuits	51
Plane Trigonometry	55	Elementary Chemistry	48
Analytical Geometry	54	Inorganic "	49
Electricity & Magnetism	51	Elementary Mineralogy	62
Biology	67	German	63
Accounts	47		

LABORATORY COURSES.

	PAGE.		PAGE.
Drawing	69	Mineralogy	75
Electricity	71	Biology	67
Chemistry	67		

II. YEAR.

(1910-1911 AND THEREAFTER.)

LECTURE COURSES.

	PAGE.		PAGE.
Electricity	52	Optics	64
Engineering Chemistry	48	Hydrostatics	64
Industrial "	48	Geology	53
Organic "	49	*Calculus or Biology ...	55 or 47
Physical "	50	German	63
Inorganic "	49	Banking & Finance	47
Analytical "	48		

*Students are recommended to consult the head of the Department of Chemistry as to the option selected.

LABORATORY COURSES.

	PAGE.		PAGE.
Optics	76	Chemistry	67
Hydrostatics	76	Mineralogy	75
Electricity	71	Biology	67

III. YEAR.

(1911-1912 AND THEREAFTER.)

LECTURE COURSES.

	PAGE.		PAGE.
Electrochemistry	48	Ferro-Metallurgy	63
Engineering Chemistry	48	Metallurgy	63
Industrial "	49	Economic Geology	53
Organic " A.....	49	Crystallography	61
Organic " B.....	49	Limited Companies	47
Chemical Plant	50	German	63

LABORATORY COURSES.

	PAGE.		PAGE.
Electrochemistry	68	Assaying	66
Chemistry	68	Heat	76
Crystallography	75		

IV. YEAR.

(1912-1913 AND THEREAFTER.)

LECTURE COURSES.

	PAGE.		PAGE.
Inorganic Chemistry	50	(g) Industrial Chemistry	49
Organic Chemistry	50	(h) Sanitary & Forensic	
Cost-keeping, etc.	47	Chemistry	50
And one of the following:		(i) Metallurgy	63
(f) Electrochemistry	48		

LABORATORY COURSES.

	PAGE.		PAGE.
Chemistry	68	Thesis	21

DEPARTMENT OF CHEMICAL ENGINEERING.

Department 6.

In many industries there is a demand for a man who combines the technical knowledge of the mechanical engineer with a knowledge of chemistry. It is to fill this want that the course of Chemical Engineering is designed.

SUBJECTS OF INSTRUCTION.

I. YEAR.

LECTURE COURSES.

	PAGE.		PAGE.
Algebra	54	Electric Circuits	51
Plane Trigonometry	55	Elementary Chemistry	48
Analytical Geometry	54	Inorganic "	49
Descriptive Geometry	50	German	63
Statics	59	Accounts	47
Dynamics	56		

LABORATORY COURSES.

	PAGE.		PAGE.
Drawing	69	Chemistry	67
Electricity	71		

II. YEAR.

(1910-1911 AND THEREAFTER.)

LECTURE COURSES.

	PAGE.		PAGE.
Calculus	55	Physical Chemistry	50
Strength of Materials	59	Inorganic "	49
Electricity	52	Optics	64
Engineering Chemistry	48	Hydrostatics	64
Industrial "	48	German	63
Organic "	49	Banking & Finance	47

LABORATORY COURSES.

	PAGE.		PAGE.
Drawing	70	Electricity	71
Optics	76	Chemistry	67
Hydrostatics	76		

VACATION WORK.

Construction Notes, see page 79.

III. YEAR.

(1911-1912 AND THEREAFTER.)

LECTURE COURSES.

	PAGE.		PAGE.
Hydraulics	57	Industrial Chemistry	49
Thermodynamics	60	Analytical "	48
Electricity	52	Metallurgy	63
Electrochemistry	68	Chemical Plant	50
Engineering Chemistry	48	Limited Companies	47
Organic " A.....	49	German	63
Organic " B.....	49		

LABORATORY COURSES.

	PAGE.		PAGE.
Drawing	70	Chemistry	68
Electricity	71	Heat	76
Electrochemistry	68	Mechanics	74

VACATION WORK.

Construction Notes, see page 79.

IV. YEAR.

(1912-1913 AND THEREAFTER.)

LECTURE COURSES.

	PAGE.		PAGE.
Inorganic Chemistry	50	And one of:	
Organic "	50	(f) Electrochemistry	48
Cost-keeping, etc.	47	(g) Industrial Chemistry	49
		(h) Sanitary & Forensic	
		Chemistry	50
		(i) Metallurgy	63

LABORATORY COURSES.

	PAGE.		PAGE.
Chemistry	68	Thesis	21

DEPARTMENT OF ELECTRICAL ENGINEERING.

Department 7.

The course in Electrical Engineering is arranged to provide preliminary training for those who would follow any of the various lines of activity connected with electrical industry.

The first two years of the course are devoted to fundamental scientific principles, and incidentally more or less of their application to engineering problems in mechanical, civil, and electrical work. Many problems are solved in the drafting rooms by graphical methods. The third year includes further theoretical work, more particular attention being given to electrical and mechanical studies in theory, operation, and design. The fourth year is devoted to advanced work in alternating current theory and practise combined with similar study in thermodynamics or hydraulics.

A large amount of laboratory practise is provided, most of which belongs to the third and fourth years. In this last year most of the time is spent in laboratory investigations and studies resulting therefrom.

Candidates for the degree in this department will be required to present satisfactory evidence of having had at least eight months' practical experience in one of the principal trades connected with Electrical Engineering. The object being that graduates may have some practical knowledge of the duties of the workman in this branch of engineering, as distinguished from those of the purely technical man. Certificate forms will be furnished on application. These forms contain full details in regard to the work required.

SUBJECTS OF INSTRUCTION.

I. YEAR.

LECTURE COURSES.

	PAGE.		PAGE.
Algebra	54	Magentism & Electricity	51
Plane Trigonometry	55	Electric Circuits	51
Analytical Geometry	54	Chemistry	48
Descriptive Geometry	50	French or German	63
Statics	59	Accounts	47
Dynamics	56		

LABORATORY COURSES.

	PAGE.		PAGE.
Drawing	69	Electricity	71

II. YEAR.

(1910-1911 AND THEREAFTER.)

LECTURE COURSES.

	PAGE.		PAGE.
Calculus	55	Steam Engines	59
Descriptive Geometry	51	Electricity	52
Optics	64	Engineering Chemistry	48
Hydrostatics	64	Organic "	49
Dynamics of Rotation	56	French or German	63
Strength of Materials	59	Banking & Finance	47
Theory of Mechanism	60		

LABORATORY COURSES.

	PAGE.		PAGE.
Drawing	70	Optics	76
Electricity	71	Hydrostatics	76
Chemistry	67		

VACATION WORK.

Construction Notes, see page 79.

III. YEAR.

(1911-1912 AND THEREAFTER.)

LECTURE COURSES.

	PAGE.		PAGE.
Theory of Construction	60	Magnetism & Electricity ...	52
Mechanics of Machinery	58	Alternating Current	52
Machine Design	58	Electrical Design	52
Hydraulics	57	Engineering Chemistry	48
Thermodynamics	60	Metallurgy	63
Heat Engines	57	Limited Companies	47

LABORATORY COURSES.

	PAGE.		PAGE.
Photography	77	Machine Design	73
Electricity	71	Mechanics	73
Electrical Design	71	Strength of Materials	73

VACATION WORK.

Construction Notes, see page 79.

IV. YEAR.

(1912-1913 AND THEREAFTER.)

LECTURE COURSES.

	PAGE.		PAGE.
Applied Electricity	53	And one of the following:	
Cost-keeping, etc.	47	(b) Hydraulics	57
		(d) Thermodynamics	61
		(f) Electrochemistry	48

LABORATORY COURSES.

	PAGE.	
Applied Electricity	71	Work in option selected.
Thesis	21	

OUTLINE OF LECTURE COURSES.

ARCHITECTURE.

HISTORY OF ARCHITECTURE (Elementary).

Required in Department 4, Year I.; 1 hour per week; both terms.

In this course the development of architecture is treated very briefly and in an elementary manner, from the Pyramids of Egypt to the present, laying special emphasis on the Egyptian, Grecian and Western Asiatic work.

ARCHITECTURAL DESIGN.

Required in Department 4, Year II.; 1 hour per week; both terms.

Elements of planning and composition.

HISTORY OF ARCHITECTURE.

Required in Department 4, Year II.; 1 hour per week; both terms.

Classical, Early Christian, Byzantine and Romanesque.

In connection with this course of lectures the students are expected to work out a number of elementary compositions, applying the history and principles given in the previous lectures.

ORDERS OF ARCHITECTURE.

Required in Department 4, Year II.; 1 hour per week; both terms.

HISTORY OF ORNAMENT.

Required in Department 4, Year II.; 1 hour per week; both terms.

In this course the development is traced from the beginning through Egyptian, Assyrian, Grecian, Roman, Byzantine, Romanesque and Moresque styles. An attempt is made to analyze ornament of the best periods and to systematize the principles followed in composition of form and color.

BUILDING MATERIALS.

Required in Department 4, Year III.

The structural and æsthetic value of the various building materials.

HISTORY OF ARCHITECTURE.

Required in Department 4, Year III.

Gothic, Renaissance, Modern.

HISTORY OF ORNAMENT.

Required in Department 4, Year III.

Gothic, Renaissance, Modern.

ARCHITECTURAL DESIGN.

Required in Department 4, Year III.

Theory of Design, planning and composition, scale, proportion, expression and decoration.

DESIGN OF TALL BUILDINGS.

Required in Department 4, Year III.

The structural features particularly incident to tall buildings are taken up, such as the discussion of deep foundations, grillages, arrangement of columns and beams, fire-proofing, wind bracing, details, etc.

Designs of typical building members such as footings, columns, girders, etc., are worked out in the class and drafting rooms.

Text Books:—Architectural Engineering—J. K. Freitag;
Skeleton Construction in Buildings—W. H. Birkmire.

SANITARY SCIENCE.

Required in Department 4, Year IV

Modern plumbing, its design and installation.

HEATING AND VENTILATION.

Required in Department 4, Year IV.

The design of different systems, where they should be used, heating specifications, etc.

ARCHITECTURAL DESIGN.

Required in Department 4, Year IV.

ASTRONOMY AND GEODESY.

ASTRONOMY, ELEMENTARY.

Required in Department 1, Year II.; 1 hour per week; both terms.

A course in descriptive Astronomy, explaining the ordinary astronomical terms, and describing the various celestial bodies and their motions. In the evenings opportunity will be given for identifying the stars and for observing with telescopes.

Text book:—Introduction to Astronomy—F. R. Moulton.

ASTRONOMY AND GEODESY.

Required in Department 1, Year III.

The course of lectures deals with the determination of time, latitude, longitude and azimuth, by methods adapted to the use of the surveyor's transit and the sextant. It is designed to fulfil the requirements of the final examinations for Ontario and Dominion Land Surveyors.

In Geodesy an account is given of the principles and methods of a secondary triangulation survey, also of the principles involved in the North-West system of survey.

Text book:—Practical Astronomy as applied to Geodesy and Navigation, Doolittle; Nautical Almanac, 1911.

ASTRONOMY.

Required in Department 1, Year IV.

The lecture course in this subject comprises the theory and adjustment of the instruments used in connection with a geodetic survey; the methods of taking and reducing observations for time, longitude, latitude, and azimuth, with the precision required on such a survey; and other matters relating to these subjects.

GEODESY AND METROLOGY.

Required in Department 1, Year IV.

The lecture course includes a description of the methods of measuring base lines, and the angles of a triangulation; the geometry of the spheroid, with applications to geodetic problems; the computation of geodetic positions; the solution of large triangles on the earth's surface, and the adjustment of a triangulation; trigonometric and precise spirit levelling; the determination of the figure of the earth by arc measurements, and by the pendulum; the theory of map projections, etc.

BIOLOGY.**ELEMENTARY BIOLOGY.**

Required in Department 5, Year I; 2 hours per week.

A course of two lectures a week throughout the session is designed as an introduction of the whole range of biological studies. After a sketch of the scope and objects of these, the lectures will treat (a) of the fundamental principles of biology, as illustrated by the simplest animals and plants; (b) of typical forms of higher plants in ascending order; (c) of typical forms of animals in a similar way; and (d) of the structure and functions of the human body. Students are recommended to make use of the Biological Museum in connection with this course of lectures. For reference; Jeffrey Parker, Elementary Biology; Ramsay Wright, High School Zoology; Atkinson, Elementary Botany; Huxley, Lessons in Elementary Physiology.

ADVANCED BIOLOGY.

Optional in Department 5, Year II.

A short course of instruction in the Morphology and Physiology of Bacteria, Moulds and Yeast Fungi.

BUSINESS.**ACCOUNTING.**

Required in Year I; 1 hour per week; both terms.

The principles of accounting; illustrated by typical accounts.

BANKING AND FINANCE.

Required in Year II; 1 hour per week; both terms.

Money and the instruments of credit; bond issues, loans, sinking funds, etc.

LIMITED COMPANIES.

Required in Year III.

Partnerships; the history and development of the limited liability company; the Companies Acts; Company finance.

CONTRACTS AND SPECIFICATIONS.

Required in Departments 1 and 4, Year IV.

Contract law; principles of specifications.

COST-KEEPING, ETC.

Required in Departments 2, 3, 5, 6, and 7, Year IV.

Works management, accounts, analysis of costs, reports.

CHEMISTRY.

ANALYTICAL CHEMISTRY.

Required in Department 5, Year II; Departments 2 and 6, Year III.

The principles of chemical analysis; select gravimetric and volumetric methods; technical analysis.

ELEMENTARY CHEMISTRY.

Required in Departments 1, 2, 3, 4, 5, 6 and 7, Year I; 2 hours per week; both terms.

Elementary chemistry with experimental illustrations.

Text book:—Briefer Course—Remsen.

ENGINEERING CHEMISTRY.

Required in Departments 1, 2, 3, 5, 6 and 7, Year II; 1 hour per week; second term.

A study of the industrial production and application of heat and light, and of the chemistry of fuel and the products of combustion.

ENGINEERING CHEMISTRY.

Required in Departments 1, 2, 3, 5, 6 and 7, Year III; Department 4, Year II.

The application of chemistry to engineering problems, air, water, sewage, the materials of construction, explosives, etc.

ELECTROCHEMISTRY.

Required in Departments 5, 6 and 7, Year III.

An elementary course illustrated by experiments.

ELECTROCHEMISTRY.

Optional in Departments 5, 6 and 7, Year IV.

More advanced lectures are given on the theory of solutions and electrolysis, and the application to the practice of electro-deposition and electrolytic refining of metals. The course also includes lectures on the electric furnace, with special consideration of the efficiency.

Text books:—Electrometallurgy—Borchers; Electrochemistry—LeBlanc; Electrochemistry—Lupke.

INDUSTRIAL CHEMISTRY—INORGANIC.

Required in Departments 5 and 6, Year II; 1 hour per week; both terms.

Manufacture of salts, acids, alkalies, and inorganic chemicals.

Text book:—Industrial Chemistry—Thorp.

INDUSTRIAL CHEMISTRY—ORGANIC.

Required in Departments 5 and 6, Year III.

The study of petroleum and its products, coal tar and its products, the destructive distillation of wood, fats, oils, soap, sugar, starch, and gum; fermentation industries, etc.

Text book:—Industrial Chemistry—Thorp.

INORGANIC CHEMISTRY.

Required in Departments 5 and 6, Year I.; 1 hour per week; both terms.

A study of the elements and their important inorganic compounds.

Text book:—Introduction to General Inorganic Chemistry—Alex. Smith.

INORGANIC CHEMISTRY.

Required in Departments 2, 5 and 6, Year II; 1 hour per week; first term.

The chemistry of the metals.

ORGANIC CHEMISTRY.

Required in Departments 1, 2, 3, 4, 5, 6 and 7, Year II; 1 hour per week; first term.

An elementary course.

Text book:—Theoretical Organic Chemistry—Cohen.

ORGANIC CHEMISTRY.

Required in Departments 5 and 6, Year II; 1 hour per week; both terms.

An elementary course dealing with the aliphatic and aromatic series of compounds.

Text book:—Theoretical Organic Chemistry—Cohen.

ORGANIC CHEMISTRY (A).

Required in Department 5, Year III.

A detailed study of the compounds of carbon.

Text book:—Organic Chemistry—Perkin and Kipping.

ORGANIC CHEMISTRY (B).

Required in Department 5, Year III.

This course includes the consideration of the several kinds of stereoisomerism, desmotropism, etc.

ORGANIC CHEMISTRY.

Required in Departments 5 and 6, Year IV.

Special chapters in organic chemistry; dyestuffs, sugars, laboratory methods, etc.

Text books:—

Lehrbuch der Organischen Chemie—Meyer und Jacobsen; Arbeitsmethoden für organisch-chemische Laboratorien—Lassar-Cohn; Synthetic Dye Stuffs—Cain and Thorpe; Organic Chemistry for advanced Students—Cohen.

PHYSICAL CHEMISTRY.

Required in Departments 5 and 6, Year II; 2 hours per week; both terms.

An introductory course on the elements of chemical mechanics, and the theory of solutions.

INORGANIC CHEMISTRY.

Required in Departments 5 and 6, Year IV.

Selected chapters in chemical theory.

SANITARY AND FORENSIC CHEMISTRY.

Optional in Departments 5 and 6, Year IV.

The composition and examination of air, water and food; poisons and their detection.

SANITARY CHEMISTRY AND BACTERIOLOGY.

Optional in Department 1, Year IV.

The study of water supply and sewage disposal.

CHEMICAL PLANT.

Required in Departments 5 and 6, Year III.

A study of chemical machinery and apparatus.

DRAWING.**DESCRIPTIVE GEOMETRY.**

Required in Departments 1, 2, 3, 4, 6 and 7, Year I; 1 hour per week; both terms.

This course of lectures deals chiefly with the principles of orthographic and oblique projections and the application of such principles to the solution of problems relating to straight lines and planes.

Text books:—Elements of Descriptive Geometry—Church; Descriptive Geometry—Millar.

Reference:—Davidson.

DESCRIPTIVE GEOMETRY.

Required in Departments 1, 2, 3, 4, 6 and 7, Year II; 1 hour per week; both terms.

This course of lectures is a continuation of the work taken in the first year with the following additions: Problems relating to curved surfaces, principles of shades and shadows, and perspective.

DESCRIPTIVE GEOMETRY.

Required in Department 1, Year III.

This course of lectures deals with spherical projections, the principles of map making, and the graphical solution of spherical triangles.

DESCRIPTIVE GEOMETRY.

Required in Department 4, Year III.

Advanced work in shades and shadows and perspective.

ELECTRICITY.**MAGNETISM AND ELECTRICITY.**

Required in Departments 3, 5, 6 and 7, Year I; 2 hours per week; first term.

A course of lectures on general principles relating to magnetism, electricity, electromagnetism, electrostatics, etc., illustrated largely from engineering apparatus.

Text book:—Elementary Electricity and Magnetism—S. P. Thompson.

ELECTRIC CIRCUITS.

Required in Departments 3, 5, 6 and 7, Year I; 2 hours per week; second term.

This course of lectures concerns chiefly fundamental principles relating to electric circuits and leads to consideration of such problems as the distribution of electric energy through lines and networks and the division of load between generators.

Text Book:—Electrical Problems—Hooper and Wells.

ELECTRICITY.

Required in Departments 3, 5, 6 and 7, Year II; 2 hours per week; both terms.

Deals with the theory of electrical measurements, and detailed study of various methods applicable under different conditions in engineering practice to the measurement of resistance, current, potential difference, power and energy; calibration of commercial measuring instruments. The effect of choice of conditions of measurement on the accuracy of the result is considered.

Text book:—Electrical Measurements—Carhart and Patterson.

ELECTRICITY.

Required in Department 2, Year III; Department 1 and 4, Year IV.

A course designed to fit the requirements of non-electrical students. A study of essential principles is followed by discussion of electrical apparatus, plants, power transmission, railways, etc.

Text book:—Elementary Electricity and Magnetism—Jackson.

MAGNETISM AND ELECTRICITY.

Required in Departments 3, 6 and 7, Year III.

A course of lectures on theory of magnetism and magnetic circuits, theory of direct current generators, motors, etc.

Text book:—Elements of Electrical Engineering—Franklin and Esty.

ALTERNATING CURRENT.

Required in Department 7, Year III; Department 3, Year IV; 2 hours per week; second term.

A first course of lectures on the subject, covering principles of measurement and leading to the analytical and graphical treatment of the simpler problems relative to alternating current circuits and machinery.

Text book:—Elements of Electrical Engineering—Franklin and Esty.

ELECTRICAL DESIGN.

Required in Department 7, Year III.

A course of lectures dealing with design of electric machinery and plants, accompanied by designs to be worked out in the design room.

References:—Dynamo-electric Machinery—S. P. Thompson; Electric Machine Design—Parshall and Hobart.

APPLIED ELECTRICITY.

Required in Department 7, Year IV.

This course deals by analytical and vector methods with the theory of alternating current circuits and machinery. Applications of theory are considered with regard to transformers, single and polyphase generators, synchronous motors and rotary converters, induction and commutating series motors, transmission lines, wave analysis, etc.

Text books:—Alternating Currents—Franklin and Williamson; Elements of Electrical Engineering—Franklin and Esty.

GEOLOGY.

GEOLOGY.

Required in Departments 2 and 5, Year II; Department 1, Year III; 1 hour per week; both terms.

This course deals chiefly with historical geology with special reference to Canadian formations.

Reference books:—Introduction to Geology—Scott; Text Book of Geology—Dana.

ECONOMIC GEOLOGY. (Including Dynamical and Structural Geology.)

Required in Departments 2 and 5, Year III; Department I, Year IV.

A study of the more important economic rocks, minerals and ores with their geological associations. Special attention paid to Canadian deposits.

ORE DEPOSITS.

Required in Department 2, Year III.

Discussion of the origin and classification of ore deposits in a general way, the mode of occurrence of the chief metals, and statistics of production, special attention being given to the metals mined in Canada.

ADVANCED GEOLOGY.

Required in Department 2, Year IV.

(A) Pre-Cambrian Geology,—An account of the Keewatin, Huronian and Laurentian rocks of Canada, with their distribution, structural relations and economic features, and briefer accounts of similar formations in the United States and elsewhere. Works of Reference, Reports of the United States and Canadian Geological Surveys, of the Bureau of Mines of Ontario, etc.

- (B) **Pleistocene Geology.**—Lectures on the formation and distribution of the drift deposits of North America, with brief references to other regions. Glacial, Inter-glacial and Post Glacial beds are described, changes of climate are discussed with their probable causes, and the economic features of the clays, sands and gravels are pointed out. A weekly excursion is made during October and November to points of interest near Toronto, which is the centre of the most important development of Pleistocene in America.
- (C) **Physiography.**—A course of lectures on the surface forms of the earth, with the geological factors which have produced them. The broad features of the earth, its plains, tablelands, hills, valleys, mountains, oceans, rivers and lakes are discussed in a general way, methods of topographical surveys and mapping are referred to, and the chief physiographic areas of Canada are described.

MINING GEOLOGY.

Required in Department 2, Year IV.

A course of lectures on geological problems associated with mining, typical mining regions in Canada, the United States and elsewhere being discussed from the geological side. Works of reference, Mineral Industry and the books mentioned under (A).

MATHEMATICS.

ALGEBRA.

Required in Departments 1, 2, 3, 4, 5, 6 and 7, Year I; 2 hours per week; both terms.

Simple equations of one, two and three unknown quantities; quadratic equations of one and two unknown quantities; elementary treatment of variation, proportion and progressions; interest forms and annuities, permutations, combinations, binomial theorem.

Text book:—Intermediate Algebra—De Lury.

ANALYTICAL GEOMETRY.

Required in Departments 1, 2, 3, 4, 5, 6 and 7, Year I; 1 hour per week; both terms.

The course in Elementary Analytical Geometry covers the more familiar propositions in connection with the straight line, circle, parabola, ellipse and hyperbola. The subject is treated so as to illustrate the general methods of analytical geometry.

CALCULUS, DIFFERENTIAL AND INTEGRAL.

Required in Departments 1, 2, 3, 4, 6 and 7, Year II; Department 5, Year II, optional; 2 hours per week; both terms.

This is an elementary course in the infinitesimal calculus, but adequate to afford a knowledge of the character and methods of the subject and to enable students in chemistry, engineering, etc., to understand such of their text books as introduce the calculus.

LEAST SQUARES, METHOD OF.

Required in Department 1, Year III.

The course of lectures includes: The general principles of probability the law of error, direct measurements of equal and different weights; mean square and probable errors; indirect measurements; conditioned observations; applications to empirical constants and formulæ, etc.

Text book:—Least Squares—Merriman.

TRIGONOMETRY, PLANE.

Required in Departments 1, 2, 3, 4, 5, 6 and 7, Year 1; 2 hours per week; both terms.

Trigonometrical ratios with their relations to one another, sines, etc., of the sum and difference of angles with deduced formulæ, solutions of triangles, expressions for the area of triangles, radii of circumscribed, inscribed and escribed circles.

Text book:—Practical Trigonometry—Plane and Fawdry.

TRIGONOMETRY, SPHERICAL.

Required in Department 1, Year II.; 1 hour per week; first term.

The course of lectures includes the derivation of formulæ and their application to the solution of triangles and to practical problems.

Text book:—Spherical Trigonometry—Todhunter and Leatham.

MECHANICS.**CEMENTS AND CONCRETE.**

Required in Departments 1 and 4, Year III.

A short course of lectures on the testing of cements, the use of concrete plain and reinforced, and the theory of reinforced concrete.

CEMENTS AND CONCRETE.

Required in Department 4, Year IV.; optional in Departments 1 and 3, Year IV.

Manufacture, testing and use of Portland cement; concrete and reinforced concrete; mathematical theory of reinforced concrete.

Reference books:—Reinforced Concrete—Buel and Hill; Principles of Reinforced Concrete Construction—Turneure and Maurer; Concrete, Plain and Reinforced—Taylor and Thompson.

DYNAMICS.

Required in Departments 1, 2, 3, 4, 6, and 7, Year I.; 2 hours per week; both terms.

Kinematics and dynamics of rigid bodies, motion of translation, acceleration, graphics, the laws of motion, impulse and momentum, work and energy, power of pumps, etc.

Text book:—Tutorial Dynamics—Briggs and Bryan.

DYNAMICS OF ROTATION.

Required in Departments 1, 2, 3, 6 and 7, Year II.; 1 hour per week; both terms.

Angular motion, velocity and acceleration, moment of inertia, simple harmonic motion, the pendulum, centres of mass, suspension and percussion, the phenomena of rotating bodies with special reference to such as fly wheels, governors, etc.

Text book:—Dynamics of Rotation—Worthington.

RETAINING WALLS, FOUNDATIONS AND DAMS.

Required in Department 1, Year IV.

This course of lectures is devoted to the design of the structures mentioned. Preparatory to the discussion of the practical aspects of the subject, and in order to gain familiarity with the fundamental principles involved, a large part of the first term is given over to the consideration of the theory of compound stress. The most approved forms of construction of retaining walls, footings, abutments, piers and dams are then described, and typical designs are worked out in the class and drafting rooms.

Text books and books of reference:—Retaining Walls for Earth—M. A. Howe; Walls, Bins and Grain Elevators—M. S. Ketchum; A Practical Treatise on Foundations—W. M. Patton; A Treatise on Masonry Construction—I. O. Baker; Design and Construction of Dams—E. Wegmann.

HEAT ENGINES.

Required in Departments 3 and 6, Year III.

This course in heat engines is intended for students in Mechanical Engineering, to be supplementary to the general course of lectures in thermodynamics given in the third year.

The principal commercial forms of heat engines are dealt with in a more or less descriptive manner: special attention is given to considerations affecting the design of the ordinary forms of steam engines, gas engines and oil engines.

HYDRAULICS.

Required in Departments 1, 2, 3 and 7, Year III.

This is an introductory course of lectures in hydraulics and is devoted to the development and discussion of fundamental formulæ relating to the flow of water in pipes, the measurement of discharge by various methods, such as orifices and weirs, the conditions of flow obtaining in open channels, artificial and natural, and in pipes flowing partially full; together with other kindred subjects.

The object of this course is to provide the student with a good working knowledge of the fundamental principles of hydraulics; such as is useful in practical work, and is necessary to the intelligent investigation of more advanced problems, such as the design of turbines, water wheels and power plants generally.

Text book:—Treatise on Hydraulics—Merriman.

HYDRAULICS.

Optional in Year IV.

Following up the third year course in this subject the theory already acquired is applied to the solution of problems connected with branched pipes, water mains discharging at various points along their length, the effect of a dam on the water level at any point on a stream and numerous other problems.

The most important question considered and to which most of the lectures are devoted is the theory of turbines and centrifugal pumps, the effect of the design on the speed, discharge, power and efficiency being fully taken up.

Text books:—Hydraulic Motors, etc.—Bodmer; Centrifugal Pumps—Innes; Hydraulics—Merriman.

MACHINE DESIGN.

Required in Departments 3, 6 and 7, Year III.

This course of lectures is principally concerned with the application of the principles of kinematics and the theory of the strength and elasticity of materials to the design of machine parts, such as shafting, gearing, journals, clutches, etc.

In connection with these lectures, simple problems involving the design of machine parts are set for the student to work out in the drafting rooms, such drawings, with the necessary calculations, forming a part of the practical work in the subject.

Text book:—Machine Design, Construction and Drawing—Spoonner.

MACHINE DESIGN.

Required in Departments 3 and 6, Year IV.

This course of lectures is a continuation of the course given in the third year, the problems in design being of a more advanced order.

Text book:—Machine Design, Construction, and Drawing—Spoonner.

MECHANICS OF MACHINERY.

Required in Departments 3 and 7, Year III.

In this course the questions dealt with are the construction of acceleration diagrams, the determination of the accelerations of various parts of machines, the kinetic energy of machines, the effect of the weights and accelerations of parts on the velocity of the fly-wheel and the proper weight of the latter to fulfil given conditions. The theory of various forms of governors is also fully taken up and the efficiency of machines. The discussion of the design of slide valves and gears is continued in this course.

Text books:—Mechanics of Machinery—Kennedy; Slide Valve Gears—Halsey.

MILL BUILDING DESIGN.

Required in Department 3, Year IV.

The structural problems involved in the design of steel mill buildings are discussed in this course of lectures. Types of buildings, various styles of trusses, columns and details are described and the complete design of a steel mill building is worked out in the class and drafting rooms.

Text book:—Mill Building Design—Milo S. Ketchum.

STATICS.

Required in Departments 1, 2, 3, 4, 6 and 7, Year I.; 2 hours per week; both terms.

This course of lectures deals with forces in a single plane, and concerns chiefly the calculation of tension, compression and shearing stresses in frame structures and solid beams. It also deals with the consideration of problems relating to friction.

STEAM ENGINES.

Required in Departments 3 and 7, Year II.; 1 hour per week; first term.

This course of lectures includes a discussion of the principles of action of the steam engine; also the theory and design of various simple forms of valve gears used in the operation of such engines.

STRENGTH OF MATERIALS.

Required in Departments 1, 2, 3, 4, 6 and 7, Year II.; 2 hours per week; both terms.

Elasticity and strength of materials mathematically treated, including tension, compression and shear; the strength of pipes, boilers and riveted joints; stresses and deflections in beams and columns; torsion and shear in shafts; suddenly applied loads; repeated stresses; resilience.

Text book:—Mechanics of Materials—Merriman.

STRENGTH AND ELASTICITY OF MATERIALS.

Optional in Year IV.

Most of the work taken up is in connection with structures in which the stresses are statically indeterminate.

Reference books:—Modern Framed Structures—Johnson; Roofs and Bridges, Part IV—Merriman and Jacoby.

STEEL AND IRON.

Optional in Year IV.

In this course of lectures are discussed the relations between the composition of steels and irons and their physical properties. The effects of heat treatment and the constitution and structure as revealed by the microscope, are studied. The subjects taken up in Year III. are continued.

THEORY OF CONSTRUCTION.

Required in Department 1, Year III.

In the first term, the theory relating to the design of box and plate girders is covered fully, and the complete design of a plate girder span is worked out in the class and drafting rooms.

The second term is given chiefly to the design of a riveted truss highway span and a pin-connected truss railway span, the complete designs being made in the lectures and drafting rooms. Restrained, continuous and trussed beams complete the term's work.

THEORY OF CONSTRUCTION.

Required in Departments 2, 3, 4, and 7, Year III.

The work is practically the same as that for Department 1 in the first term except that a runway girder is designed instead of a plate girder bridge span, and that restrained, continuous and trussed beams are discussed at the end of the term.

Text books:—Modern Framed Structures—Johnson, Bryan and Turneure; Roofs and Bridges, Part III, Bridge Design—Merriman and Jacoby; Pocket Companion—Cambria Steel or Carnegie.

THEORY OF MECHANISM.

Required in Departments 3 and 7, Year II.; 2 hours per week; both terms.

This course of lectures treats of the motions of machines, the latter being assumed to be of sufficient strength to resist acting forces. The formation of machines is dealt with in a general way and investigations of the velocities of points and links are made. The design of gear teeth and the application of trains of gears are taken up, also problems in static equilibrium.

Text books:—Mechanics of Machinery—Kennedy; Elements of Mechanism—Goodeve.

THERMODYNAMICS.

Required in Departments 3, 6 and 7, Year III.; Department 1, Year IV.

In this course of lectures the subject is treated in such a way as to make it of practical value and give a working acquaintance with the principles on which it is based. After the elementary ideas have been given and the proofs of the properties of Carnot's cycle, applications of the subject are made to the perfect gas and to saturated steam and to the various types of engines. Temperatures are taken from the air thermometer.

THERMODYNAMICS.

Required in Department 2, Year IV.; 1 lecture per week; both terms.

This course is especially designed to give the Mining Engineer a working knowledge of Thermodynamics as applied to the perfect gas so that he will be able to understand clearly the action of air compressors, etc. After deducing general principles, the efficiency of compressed air transmission and the relative merits of different types of compressors is discussed.

THERMODYNAMICS.

Optional in Year IV.

This is a continuation of the introductory course, the subject being here treated from a general standpoint, and the ideas of entropy and of the absolute scale of temperatures being introduced. The course includes the treatment of saturated and superheated vapours, gases, the flow of fluids, chimney and boiler efficiency and the theory of various engines and other appliances including air compressors, refrigerating machines, injectors and the various forms of link motions and radial valve gears.

Text books:—Thermodynamics—Peabody; Steam Tables—Peabody.

MINERALOGY.

CRYSTALLOGRAPHY.

Required in Department 5, Year III.

A course devoted to lectures and practical work on the geometrical and optical properties of crystals, preparing the student for the study of rocks in thin sections and for the examination of crystallized substances, natural and artificial, under the polarizing microscope.

ELEMENTARY MINERALOGY.

Required in Department 5, Year I, and in Department 2, Year II.; 2 hours per week; first term.

After introducing the student to the chief chemical, physical and crystallographic characteristics of minerals, the course becomes descriptive and deals with about one hundred of the minerals most important from the industrial or scientific point of view.

Text books:—Minerals and how to study them—Dana; Text Book of Mineralogy—Dana.

PRIMARY MINERALOGY.

Required in Department 1, Year II; 2 hours per week; first term.

A very brief introduction to the study of minerals and rocks.

Text books:—Minerals and how to study them—Dana; Handbook of Rocks—Kemp.

ELEMENTARY PETROGRAPHY.

Required in Department 2, Year III.

A course of lectures and laboratory work introducing the student to the macroscopic study of rocks.

Text books:—Handbook of Rocks—Kemp; Rocks and rock minerals—Pirsson.

GENERAL PETROGRAPHY.

Required in Department 2, Year IV.

Study of the chief rock-forming minerals and of some phases of petrography not covered in the course of the previous year.

MINING, METALLURGY AND ORE DRESSING.**MINING.**

Required in Department 2, Year II.; 1 hour per week; one term.

An introduction to the study of mining and ore dressing methods.

MINING.

Required in Department 2, Year III.

General mining methods.

MINING.

Required in Department 2, Year IV.

Special mining methods, examinations, reports.

METALLURGY.

Required in Departments 2, 5 and 6, Year II.; 1 hour per week; one term.

An introduction to the study of general metallurgy.

METALLURGY.

Required in Departments 2, 5 and 6, Year III.

General metallurgy of gold, silver, lead and copper.

METALLURGY.

Required in Departments 2, 5 and 6, Year IV.

Advanced studies in the metallurgy of gold, silver, copper and lead.

METALLURGY OF IRON AND STEEL.

Required in Departments 1, 2, 3, 5, 6, and 7, Year III.

The physical properties of iron and steel and the circumstances that influence the strength, etc., of iron. The different modes of manufacture of iron and steel and the effect of different processes of making on the resulting products. Explanations of specifications for iron and steel adopted by engineers.

ORE DRESSING.

Required in Department 2, Year III.

ORE DRESSING.

Required in Department 2, Year IV.

MODERN LANGUAGES.**FRENCH.**

Required in Department 4, optional in Departments 1, 2, 3 and 7, Years I and II.; 1 hour per week; both terms.

An elementary course intended to train the student in the translation of scientific journals and treatises.

GERMAN.

Required in Departments 5 and 6, optional in Departments 1, 2, 3 and 7, Years I and II.; 1 hour per week; both terms.

An elementary course intended to train the student in the translation of scientific journals and treatises.

PHYSICS.

ACOUSTICS.

Required in Department 4, Year III.

The general principles of acoustics, reflection, transmission and absorption of sound. The application to building acoustics.

HYDROSTATICS.

Required in Departments 1, 2, 3, 4, 5, 6 and 7, Year II.; 1 hour per week; second term.

Laws of fluid pressure and application to machines, density of solids and fluids, theory of flotation.

OPTICS.

Required in Departments 1, 2, 3, 4, 5, 6 and 7, Year II.; 1 hour per week; first term.

The laws of reflection, refraction and transmission of light, photometry; theory of optical instruments; industrial photography and blue printing.

RAILWAY ENGINEERING.

Required in Department 1, Year IV.

The object of this course is to make the student acquainted with the general principles of railroad and street railway engineering and the subject will be studied from the standpoint of—economic theory of location; train resistance; effect of grade, distance and curvature and rise and fall; maintenance of way; yards and terminals; tunnels, and street railway practice.

SURVEYING.

SURVEYING.

Required in Departments 1, 2 and 4, Year I; 1 hour per week; both terms.

The lecture course includes—the general principles; surveying with the chain, the compass and chain and the transit and chain; the applications of trigonometry to inaccessible heights and distances; mensuration of surfaces and solids, co-ordinate surveying, division of land, etc.

Text books:—Land Surveying—Gillespie; Theory and Practice of Surveying—Johnson.

SURVEYING.

Required in Departments 1, 2 and 4, Year II.; 1 hour per week; both terms.

This course of lectures takes up in detail, simple, reverse and compound curves as applied to railroad surveying. It also includes stadia, plane table and photographic surveying as applied to topographic work and also the main features of mine and hydrographic surveying.

Text books:—Henck, Shunk, Searles, Allen (Field books for Engineers); Theory and practice of surveying—Johnson; Plane surveying—Raymond.

SURVEYING AND LEVELLING.

Required in Departments 1 and 2, Year III.

This course of lectures takes up the work of the railroad engineer on construction, including profiles, cross sectioning, computation of volume of earth work, overhaul, transition curves, laying out turnouts, frogs and switches, etc.

Also a discussion of trigonometric and barometric levelling.

Text books:—Field Engineering—Searles; Railroad Curves and Earthwork—Allen.

OUTLINE OF LABORATORY COURSES.

ASSAYING.

ASSAYING.

Required in Departments 2, 5 and 6, Year III.

Assaying of various ores for gold, silver, lead and copper.

ASSAYING.

Required in Departments 2, 5 and 6, Year IV.

Continuation of the work of Year III.

ARCHITECTURE.

ARCHITECTURE.

Work on freehand drawing, pen and ink drawing, architectural sketching in black and white, and in color, architectural design.

ASTRONOMY AND GEODESY.

FIELD WORK.

Required in Department 1, Year III.

The practical work in this subject comprises observations in the field with the transit and sextant for the determination of time, latitude and azimuth by the methods described in the lectures.

ASTRONOMY, GEODESY AND METROLOGY.

Optional in Year IV.

The practical work in the above subjects includes the observation of meridian transits for time and longitude determinations, and of prime vertical transits for latitude, with the astronomical transit instrument; the observation of meridian zenith distances of stars, and of azimuths at elongation for latitude, with the alt-azimuth; theodolite observations for azimuth; observations for latitude with the zenith telescope; the investigation of the constants of the instruments used, and the reduction of all observations; the measurement of a base line with the steel tape, and the determination of the constants of the tape; the measurement of the angles of a triangulation and the adjustment of the angles of a network of triangles, etc.

BIOLOGY.**ELEMENTARY BIOLOGY.**

Required in Department 5, Year II.; 3 hours per week; both terms.

An elementary course of laboratory work on the general structure and identification of plants and animals, and the use of the microscope in the examination of tissues and products.

CHEMISTRY.**CHEMISTRY.**

Required in Department 5, Year 1.; about 17 hours per week; both terms.

Quantitative experiments illustrating the use of the sensitive balance and confirming the fundamental laws of chemistry; qualitative inorganic analysis; quantitative analysis of pure salts; inorganic preparations.

Text book:—A Manual of Chemical Analysis, Qualitative and Quantitative—Newth.

CHEMISTRY.

Required in Departments 2 and 6, Year I.; 3 hours per week; first term.

An elementary course of experiments to illustrate the use of the sensitive balance, to verify some of the laws which form the basis of the science and to serve as an introduction to quantitative laboratory methods. Instruction given as required before each period.

CHEMISTRY.

Required in Departments 1, 2, 3, 4 and 7, Year II.; 6 hours per week; one term.

Practice in elementary qualitative and quantitative analysis.

Text book:—A Smaller Chemical Analysis—Newth.

CHEMISTRY.

Required in Department 2, Year II.; 3 hours per week; both terms.

Gravimetric determination of metals and acid radicals.

Text book:—A Manual of Chemical Analysis, Qualitative and Quantitative—Newth.

CHEMISTRY.

Required in Department 5, Year II.; 14 hours per week; both terms.

The course comprises gravimetric and volumetric estimation of metals, acidimetry and alkalimetry and the preparation of inorganic and organic substances.

Text books:—A Manual of Chemical Analysis, Qualitative and Quantitative—Newth; Practical Methods of Organic Chemistry—Gattermann.

CHEMISTRY.

Required in Department 6, Year II.; 6 hours per week; both terms.

In this course qualitative chemical analysis is well covered, also a certain amount of gravimetric analysis applied to the metals and acid radicals.

Text book:—A Manual of Chemical Analysis, Qualitative and Quantitative—Newth.

CHEMISTRY.

Required in Department 2, Year III.

This course includes acidimetry and alkalimetry and the technical analysis of ores and furnace products.

Text book:—A Manual of Chemical Analysis, Qualitative and Quantitative—Newth.

CHEMISTRY.

Required in Department 5, Year III.

Technical analysis of iron and steel alloys, ores, furnace products, ceramic materials, foods, gases, fuels, etc.; organic preparations.

CHEMISTRY.

Required in Department 6, Year III.

Technical analytical methods, acidimetry, etc.

CHEMISTRY.

Required in Departments 5 and 6, Year IV.

Advanced laboratory work in option selected.

SANITARY CHEMISTRY AND BACTERIOLOGY.

Optional in Department 1, Year IV.

The examination of water, chemically and bacteriologically.

ELECTROCHEMISTRY.

Required in Departments 5, 6 and 7, Year III.

Quantitative measurements to accompany the elementary electrochemistry lectures.

DRAWING.**DRAWING.**

Required in Departments 1 and 2, Year I.; about 16 hours per week.

Copying from the flat, lettering, topography; graphical solution of problems in statics; problems in descriptive geometry, relating to both orthographic and oblique projections; the plotting of original surveys; measured drawings.

DRAWING.

Required in Department 4, Year I.; about 15 hours per week.

Copying from the flat, lettering, topography, freehand drawing in black and white, both from copies and models; the graphical solution of problems in statics; problems in descriptive geometry, relating to both orthographic and oblique projections; measured drawings.

DRAWING.

Required in Department 5, Year I.; about 9 hours per week.

Copying from the flat, lettering, measured drawings.

DRAWING.

Required in Departments 3, 6 and 7, Year I.; about 20 hours per week.

Copying from the flat, lettering, topography; graphical solution of problems in statics; problems in descriptive geometry, relating to both orthographic and oblique projections; measured drawings.

DRAWING.

Required in Departments 1 and 2, Year II.; Department 1, about 10 hours per week; Department 2, about 6 hours per week; both terms.

Coloring and shading as applied to both topographical and construction drawings; problems in descriptive geometry relating to solids bounded by curved surfaces; principles of shades, shadows, and perspective; solution of problems in optics and strength of materials; measured drawings; elementary design.

DRAWING.

Required in Departments 3 and 7, Year II.; about 10 hours per week; both terms.

Coloring and shading as applied to construction drawings; problems in descriptive geometry relating to solids bounded by curved surfaces; principles of shades, shadows, and perspective; solution of problems in optics, theory of mechanism and strength of materials; measured drawings; elementary design.

DRAWING.

Required in Department 4, Year II.; about 18 hours per week; both terms.

Coloring and shading as applied to construction drawings. Freehand drawing, including water colors and monochrome; exercises from the orders of architecture; problems in descriptive geometry, relating to solids bounded by curved surfaces; principles of shades, shadows and perspective; solution of problems in optics and strength of materials; measured drawings; elementary design.

DRAWING.

Required in Department 6, Year II.

Same as Department 3, with exception that Department 6 does not include theory of mechanism.

DRAWING.

Required in Department 1, Year III.

Principles of map making, spherical projection, plotting of original surveys relating to topographical and railway work; problems in thermodynamics and theory of construction; original design of various structures; measured drawings.

DRAWING.

Required in Department 2, Year III.

Plotting of original surveys, relating to topographical and railway work and mining; problems in thermodynamics and theory of construction; original design; measured drawings.

DRAWING.

Required in Department 4, Year III.

Problems in descriptive geometry, shades, shadows and perspective; problems in theory of construction; advanced work in water colors and monochrome; original design including framed structures; measured drawings.

ELECTRICITY.**ELECTRICITY.**

Required in Departments 3, 5, 6 and 7, Year I.; 3 hours alternate weeks; both terms.

A course of experiments, given in logical order, designed to demonstrate fundamental principles in connection with the generation and flow of currents in electrical circuits. The work is associated with the lecture courses, magnetism and electricity, and electric circuits.

ELECTRICITY.

Required in Departments 3, 5, 6 and 7, Year II.; 2½ hours per week; both terms.

This laboratory course is closely associated with the lecture course on electricity for the second year. The more important and useful methods of testing generators and circuits for electromotive force, resistance, current, grounds, etc., are practised, often under conditions such as occur in practice. The work also includes methods of calibration of measuring instruments for voltage, current, power and energy, and certain studies of properties of incandescent lamps.

ELECTRICITY.

Required in Departments 3, 6 and 7, Year III.

This laboratory course is intended to afford the student an opportunity to become familiar with principles involved in continuous current shunt, series and compound wound generators and motors, and, to some extent, alternating current circuits and machinery. Other sections of the work deal with the magnetic properties of iron and steel, and study of iron losses in transformers and generators.

The course is arranged to stand in close relation to the lecture courses in the subjects of magnetism and electrical design for Year III, and to certain design work.

APPLIED ELECTRICITY.

Required in Department 7, Year IV.

This laboratory course involves a thorough study of principles and properties of single and polyphase circuits and apparatus. Both vector and analytical methods are applied to the solution of problems based on tests made on laboratory machines.

The work deals mainly with constant voltage and constant current transformers, single and polyphase alternators, synchronous motors, rotary converters, induc-

tion and single phase commutating motors, transmission line, etc. The work does not consist only of factory tests, but is designed to lead the student to apply theory to practice as illustrated in the apparatus under test, with a view to an exact understanding of methods and an appreciation of limitations under many conditions. Free use is made of the oscillograph as a necessary device for "seeing" conditions under investigation. The best commercial measuring instruments are available to assist toward accurate work.

POWER.

Required in Department 2, Year IV.

Under this name a number of operating experiments are arranged to afford mining students some familiarity with measuring instruments, direct and alternating current machinery.

GEOLOGY.

ECONOMIC GEOLOGY.

Required in Department 2, Year III.

Laboratory work on ores, manner of occurrence, vein structure, etc. Geological maps of typical mining regions.

GEOLOGICAL EXCURSIONS.

Required in Department 2, Year IV.

Trips to points of interest in the vicinity of Toronto.

MECHANICS.

HYDRAULICS.

Required in Departments 1, 2, 3 and 7, Year III.

The work in this course is intended to illustrate the lecture course given in hydraulics and to give the student some working acquaintance with the formulæ and coefficients met with in practice. Experiments are made on the co-efficients of velocity and discharge for orifices of different shapes and sizes, and for weirs. The coefficients obtained are used with orifices and weirs in measuring the discharge through meters, nozzles, etc., which are next under examination. Experiments on the friction of water in pipes and fire hose and in elbows and bends are also made, and the friction factors and coefficients of friction are determined.

HYDRAULICS.

Optional in Departments 1, 3 and 7, Year IV.

The time spent in the laboratory in the fourth year is devoted to experimental work on turbines of various types and centrifugal and turbine pumps and other similar devices. This experimental work is arranged to illustrate the lectures on turbine and pump design. The experiments are made on two large turbine pumps used in the laboratory supply, as well as on apparatus specially designed for instruction.

MACHINE DESIGN.

Required in Departments 3 and 7, Year III.

This course is intended to illustrate the lecture course in the subject. The student makes, in the drafting room, under instruction, original designs of various machine parts, or of complete machines of a simple nature.

MACHINE DESIGN.

Required in Department 3, Year IV.

This course is similar to that required in Year III, but the work done is of more advanced nature.

STRENGTH AND ELASTICITY OF MATERIALS.

Required in Departments 1 and 4, Year III.

This course is intended to give the student in Civil Engineering an introduction to the experimental study of the strength and elasticity of materials which is continued at much greater length during the fourth year. It is intended that he shall acquire some familiarity with the construction and operation of testing machines and with the properties of the ordinary building materials.

STRENGTH AND ELASTICITY OF MATERIALS.

Required in Departments 3 and 7, Year III.

This course is similar in most respects to the course required in Department 1, Year III, but more attention is paid to the investigation of the properties of the materials of special interest to Mechanical Engineers.

STRENGTH AND ELASTICITY OF MATERIALS.

Optional in Year IV.

This course of experiments is intended to give the student practice in investigating the elastic and physical properties of irons, steels, timber, concrete and other building materials.

Reference book:—Materials of Construction—Johnson.

THERMODYNAMICS (including Mechanical Laboratory).

Required in Departments 3 and 7, Year III.

This laboratory course is designed to assist in a clearer understanding of thermodynamics, machine design and mechanics of machinery. The work in thermodynamics consists in the setting of slide valves, indicating engines, measuring the brake horse power, simple engine and boiler tests and the testing of gas and gasoline engines under various conditions. The mechanical laboratory work deals with the efficiency of belts and ropes as well as of several machines of simple construction. An examination of lubricating oils is also made by means of oil testing machines and other well-known devices. Experiments are also made on the balancing of reciprocating and rotating masses.

THERMODYNAMICS.

Optional in Departments 3 and 7, Year IV.

The work in this year is a continuation and extension of the work covered in the third year laboratory course. Careful tests are made of engines of various types such as simple, tandem, and cross-compound steam engines; steam turbines; refrigerating machines; air engine; injectors and steam pumps, etc.; and an application is made of Hirn's Analysis and the entropy diagram to the results obtained. A complete set of experiments is made on each machine and the results plotted so as to show clearly to the student the effect of various alterations in the adjustment of the engine on the resulting efficiency.

Several modern gas and gasoline engines and a gas producer give ample opportunity for the study of this type of engine, and facilities are provided for sampling the gas supply and exhaust.

Two experimental stacks and three boilers enable results to be obtained on boiler efficiency and chimney draft.

MINERALOGY.**MINERALOGY.**

Required in Department 5, Year I; 3 hours per week; both terms.

Introduction to blow-pipe analysis, determination of minerals by inspection and physical tests.

Text books:—Text book of Mineralogy—Dana; Mineral Tables—Eakle; Determinative Mineralogy and Blow-Pipe Analysis—Brush-Penfield.

MINERALOGY.

Required in Department 5, Year II; 2 hours per week; first term.

Determination of minerals by means of the blow-pipe and physical properties.

Text book:—Determinative Mineralogy and Blow-Pipe Analysis—Brush-Penfield.

MINERALOGY.

Required in Department 2, Year II; 1 hour per week; first term; 3 hours a week; second term. Determination of minerals by inspection and by means of physical tests; introduction to blow-pipe practice.

Text books:—Mineral Tables—Eakle; Determinative Mineralogy and Blow-Pipe Analysis—Brush-Penfield.

MINERALOGY.

Required in Department 1, Year II; 1 hour per week; first term; 3 hours a week, second term. Determination of minerals by inspection and by means of physical tests; study of common rock types and their identification.

Text books:—Mineral Tables—Eakle; Handbook of Rocks—Kemp.

MINERALOGY.

Required in Department 2, Year III. Determination of minerals by means of the blow-pipe and physical properties.

Text books:—Mineral Tables—Eakle; Determinative Mineralogy and Blow-Pipe Analysis—Brush-Penfield.

PETROGRAPHY:—Required in Department 2, Year IV. Study of the chief rock-forming minerals, of rocks in thin sections and in hand specimens.

Text books:—Rocks and Rock Minerals—Pirsson; Minerals in Rock Sections—Luquer.

MINING, METALLURGY AND ORE DRESSING.**MINING AND ORE DRESSING.**

Required in Department 2, Year II; 3 hours per week; one term.

Introductory work with rock-drills and various ore dressing appliances.

MINING AND ORE DRESSING.

Required in Department 2, Year III.

Continuation of work of Year II. Experimental work to determine falling ratios, magnetic permeability of minerals, etc., sampling of mill products and ore in place.

MILLING.

Required in Department 2, Year IV.

Advanced work with ore dressing appliances, complete mill tests.

METALLURGY.

Required in Department 2, Year IV.

Experiments in the pyro-metallurgy of copper and lead. refining of base bullion, cyanide tests.

PHYSICS.**ACOUSTICS.**

Required in Department 4, Year III.

Wave motion in general, laws of vibrating strings and organ pipes, velocity of sound, Melde's and Lissajous' experiments, testing absorption and reverberation.

HEAT.

Required in Departments 1, 3, 4 and 7, Year III.

Calibration of thermometers, determination of latent and specific heat, verification of gas laws, coefficients of expansion, mechanical equivalent, etc.

HYDROSTATICS.

Required in Departments 1, 2, 3, 4, 5, 6 and 7, Year II; $1\frac{1}{2}$ hours per week; second term.

Experiments on determination of specific gravity of solids and fluids. Determination of pressure, etc.

OPTICS.

Required in Departments 1, 3, 4, 5, 6 and 7, Year II; $1\frac{1}{2}$ hours per week; first term.

Reflection and refraction, optical constants of lenses and mirrors, theory of optical instruments.

PHOTOGRAPHY.

Required in Departments 1, 4, 5 and 6, Year III.

Making of negatives from the round and from the flat.

Preparing negatives for printing. Printing for various purposes. Blue printing. Mounting.

RAILWAY ENGINEERING.**FIELD WORK.**

Optional in Year IV.

During the first term an original survey for a railroad some one or two miles in length will be made, the work to be conducted according to the most modern methods of location. Upon the completion of this work, a contour map of the district surveyed will be plotted in the drafting room and a line adjusted to it. This will be staked out in the field, profiles taken and complete estimates of the cost of construction made.

SURVEYING.**FIELD WORK.**

Required in Departments 1, 2, and 4, Year I; 9 hours per week; first term.

This course comprises—testing chains; practice in chaining; a complete survey of a piece of land with the chain; keeping of field notes; the use of the compass and transit in surveying closed figures and traverse lines and in ranging straight lines; plotting by latitudes and departures and otherwise; computing areas.

FIELD WORK.

Required in Departments 1 and 2, Year II; 9 hours per week; first term.

(A) This course of instruction embraces all adjustments of the transit, accurate determination of angles of closed figure, minor problems in triangulation—ordinary and special problems as applied to railroad work in regard to curves, simple, reverse and compound, profile leveling and plotting of profile.

FIELD WORK.

Required in Department 4, Year II; 9 hours per week; first term.

- (B) This course includes adjustment of the levels, accurate differential levelling, profile levelling and plotting of same. Cross sectioning and computation of earthwork, adjustment of transit and its use in laying out curves, simple, reverse, etc.

FIELD WORK.

Required in Departments 1 and 2, Year III.

This includes adjustments of levels and accurate check differential levelling, determination of profile, cross sectioning and computation of earthwork of located line on ground and plotting of same. Also cross sectioning by use of hand level. A complete stadia topographic survey is made and plotted. The spiralling of curves on track already laid down and practical methods of locating and placing sidings and switches.

OUTLINE OF VACATION WORK.

CONSTRUCTION NOTES.

Required in Years II and III.

The construction notes required consist of neat and complete dimensioned sketches in pencil of any structures, machines or plant which may be of interest. Any object chosen should be represented and dimensioned in such a manner that it could be completely constructed from the notes as the only available information.

From students in Department 2, who have been actually engaged during the summer with Government or other approved geological survey parties, geological field notes will be accepted in lieu of construction notes.

PROFESSIONAL DEGREES.

The attention of graduates is directed to the following regulations respecting professional degrees.

The following degrees have been established: Civil Engineer(C.E.), Mining Engineer (M.E.), Mechanical Engineer (M.E.), Electrical Engineer (E.E.), Chemical Engineer (Chem.E.), subject to the following regulations:—

1. A candidate for one of the said degrees shall hold the diploma of the School of Practical Science or of the Faculty of Applied Science and Engineering and the degree of Bachelor of Applied Science except in the case provided for in clause 11 hereunder.
- 2 He shall have spent at least three years after receiving the degree of Bachelor of Applied Science in the actual practice of the branch of engineering wherein he is a candidate for a degree.
- 3 Intervals of non-employment or of employment in other branches of engineering shall not be included in the above three years. It shall not be necessary that the several periods requisite to make up the said three years be consecutive.
- 4 Satisfactory evidence shall be submitted to the University examiners as to the nature and length of the candidate's professional experience for the purpose of clauses 2 and 3.

The Examiners shall satisfy themselves by oral or written examinations in regard to the candidate's experience and competence.

5. The candidate shall prepare an original thesis on some engineering subject in the branch in which he wishes a degree; the said thesis to be accompanied by all necessary descriptions, details, drawings, bills of quantities, specifications and estimates.
- The candidate may be required at the option of the Examiners to undergo an examination in the subject of this thesis
6. Notice in writing shall be sent to the Secretary not later than the first day of February, informing him of the degree to which the candidate wishes to proceed and of the title of his proposed thesis for the approval of the Examiners.
7. The evidence under clause 4, and the thesis, with accompanying papers, described in clause 5, shall be sent to the Secretary not later than the first day of April.
8. The candidate shall be required to present himself for examination in the month of April at such time as may be arranged by the Examiners.
9. The fee for any one of the said degrees shall be twenty dollars, and shall be paid to the Bursar not later than the first day of April.
10. The thesis, drawings, and other papers submitted under clause 7 shall become the property of the University.
11. Candidates who graduated from the School of Practical Science before June, 1895, shall not be required to hold the degree of Bachelor of Applied Science.

EXTRACTS FROM ACTS.

From the Ontario Act Respecting Land Surveyors and Survey of Lands (R.S.O.).

“26. Any person serving as an apprentice as hereinbefore provided, may, with the permission of the Board of Examiners, attend the Ontario School of Practical Science, or any school, college or university, the course of study in which is, in the opinion of the Board, sufficiently similar to that in the Ontario School of Practical Science, for the purpose of taking any course of study which includes any subjects required for the final examination for admission to practice as a land surveyor, but the total period of such apprenticeship and of such course of study shall not exceed the period of four years from the date of the articles of apprenticeship as above mentioned, and not less than three years of the said period of four years shall be passed in the actual service of a practising Ontario Land Surveyor.

* * * * *

"28. The privilege of a shortened term of apprenticeship shall also be accorded to any graduate of the Royal Military College at Kingston or of the Ontario School of Practical Science in civil engineering or in mining engineering, or of the McGill College, Montreal, in civil engineering or in mining engineering, and such person shall not be required to pass the preliminary examination hereinbefore required for admission to apprenticeship with a land surveyor, but shall only be required to serve under articles with a practising land surveyor duly filed as required by section 32 of this Act, during twelve successive months of actual practice, after which, on complying with all the other requirements, he may undergo the examination prescribed by this Act.

"29. Such person at any time during his apprenticeship may, with the permission of the Board of Examiners, attend the Ontario School of Practical Science, or any school, college or university, the course of study in which is, in the opinion of the Board, sufficiently similar to that in the Ontario School of Practical Science, for the purpose of taking any course of study which includes any subject required for the final examination for admission to practice as a land surveyor, but the total period of such apprenticeship, and of such course of study, shall not exceed the period of two years from the date of the articles of apprenticeship as above mentioned, and not less than twelve months of the said period of two years shall be passed in the actual service of a practising Ontario Land Surveyor."

From Act Respecting Manitoba Land Surveyors.

"28. (1) The privilege of a shortened term of apprenticeship shall be accorded to graduates of the Royal Military College of Canada and to graduates in civil engineering of the University of McGill College of Montreal, the School of Practical Science of Toronto, the School of Mining at Kingston, and graduates of Manitoba University who have taken first or second class honours in the special course in mathematics; and such graduates shall not be required to pass the preliminary examination hereinbefore prescribed for admission to apprenticeship with a land surveyor, but shall only be required to serve under articles with a practising land surveyor, duly filed as required by section 24 of this Act, during twelve successive months of actual practice, of which at least six months shall be actual practice in the field, after which, on complying with the other requirements of this Act, he may undergo the examination for commission to practice prescribed by this Act."

From British Columbia Land Surveyors' Act, 1905.

“52. Whosoever shall have followed, during at least two years, a regular course of studies in all the branches of the sciences required by law in order to be received as a land surveyor; who has attended the lectures of a British university or college where a complete course of theoretical and practical instruction is given in civil engineering, physics, and all other branches of sciences required by law in order to be admitted as a land surveyor, and who has received from such university or college, after a regular examination, his diploma or degree as a civil engineer or land surveyor, on satisfying the Board that he is duly qualified as aforesaid, may, without undergoing the examination for admission to the study of land surveying, be received as a student by any member of the Corporation practising in this Province, and shall be bound to perform only twelve months' actual service in the field as such; or, if he has obtained his degree or diploma as a civil engineer or land surveyor in less than two full years, then only such time of service which, added to the time he has devoted to his course of studies, shall complete the period of three full years; and, at the expiration of the said active service, such person, on complying with the other provisions of this section, shall have the right to present himself and undergo the examination required by law, and, if qualified, to be admitted to practise as a land surveyor for the Province as if he had served his three full years under his indentures with a practising land surveyor; but instead of paying fifty dollars he shall be obliged to pay sixty dollars as fees for his examination and commission as land surveyor.”

The above section is to be taken collectively as a whole, no separate clause or sentence can be applied to any particular case.

From the Dominion Lands Act, 1908.

“Every graduate in surveying of the Royal Military College of Canada, and every person who has followed a regular course of study in all the branches of education required by this Act for admission as a Dominion land surveyor, for at least two years, in any college or university where a complete course of theoretical and practical instruction in surveying is organized, and who, after examination, has thereupon received from such college or university a diploma or certificate, shall be exempt from serving three years as aforesaid, and shall be entitled to examination for a commission after being admitted upon examination as aforesaid as an articulated pupil and serving one year under articles with a

Dominion land surveyor, including six months' actual practice with him in the field, on producing an affidavit from the said surveyor in said form C, together with his own affidavit in said form D, that he has served for one year as herein provided; but it shall rest with the Board to decide whether the course of instruction in such college or university meets the requirements of this section.

From the Ontario Architects' Act.

"Any student who has matriculated in Arts in any University in His Majesty's dominions, or in the Ontario School of Practical Science, shall not be required to pass the preliminary examinations.

"23. Any person who applies for admission to registration as an architect after the coming into force of this Act, shall be not less than twenty-one years of age, shall have served as a student not less than five years with a principal or principals entitled to register under this Act, or with any other principal or principals approved by the Council, and have passed such qualifying examinations as may be required by this Act.

"24. (3) Any person who has graduated from the Ontario School of Practical Science shall be required to serve only three years as a student, one of which three years may be served during the vacation of such school.

"(4) Upon and after the passing of this Act, students shall serve such term as is required to be served by the provisions of this Act, under indenture to be a registered architect, which indenture and any assignment thereof with affidavit of execution thereto attached shall be filed with the Registrar upon payment of such fees as the Council may by regulation direct.

LABORATORY EQUIPMENTS.

THERMODYNAMIC AND MECHANICAL LABORATORY.

The University has just completed the erection of a large, well-equipped building for the accommodation of the steam, gas, mechanical and hydraulic laboratories, these laboratories being used for the first time during the present session. A more complete description of the laboratories has been published elsewhere so that the present description is only intended to give the main features.

The part of the building set apart for thermodynamics and other mechanical work is the ground floor of a room 60 ft. x 155 ft. This room is lighted entirely from the roof in a very perfect way. A part of the space 40 ft. wide running the entire length of 155 feet is served by a 3-ton travelling crane and contains the following equipment:

50 h.p. Brown engine with separate jackets on both heads and barrel of cylinder.

Two-stage Rand air compressor having compound steam cylinders, each fitted with Meyer cut-off gear. The low pressure air cylinder has Corliss inlet gear.

30 h.p. high-speed Leonard tandem compound engine with shaft governor.

15 h.p. high speed McEwen engine.

75 h.p. two line compound Willans engine.

15 h.p. DeLaval turbine with special nozzles for condensing and non-condensing tests.

Two 15 h.p. Leonard engines with different types of valves, which are used for valve setting. There are also two surface condensers with air pumps so arranged that any engine in the laboratory may be made to exhaust into the atmosphere through an open heater or into one of the condensers, the change from one arrangement to the other being accomplished in a few minutes without the aid of valves.

The laboratory further contains

3-ton York refrigerating machine with tanks.

Ansler transmission dynamometer.

Apparatus for testing injectors and steam pumps.

Numerous other pieces of apparatus and instruments.

The work on internal combustion engines and producers is performed on the following:—

18 h.p. Canada suction gas producer.

14 h.p. National gas engine arranged for various compressions and points of ignition.

10 h.p. Fielding and Platt engine for city gas or coal oil, having various adjustments.

8 h.p. Otto gas engine.

6 h.p. marine gasoline engine.

Ericsson air engine.

Various accessories to above machines.

Steam for the laboratory is supplied by two 50 h.p. and one 100 h.p. Babcock and Wilcox boilers, the latter having an internal superheater. These boilers are located in a separate boiler room. They are used for experimental work only and are fitted up for testing. The gases pass up through two independent chimneys and these have been arranged so that the draft and other conditions in the chimney at any point of its height may be examined.

In smaller work rooms off the main laboratory are placed belt and oil testing machines, apparatus for testing the efficiency of gears and machines, and for experiments in the balancing of machinery.

HYDRAULIC LABORATORY.

The hydraulic laboratory occupies two floors each 40 feet x 112 feet, which are well lighted by large windows on the side and end.

The water for the experimental work is pumped through the various pieces of apparatus from a well by means of two turbine pumping units both of which are driven by a Belliss and Morcom compound engine of 125 h.p. running at a speed of 525 revs. per minute. Both engine and pumps have been installed with a view to using them in experimental work as well as for supply of water for the other apparatus used in the laboratory.

The pumping units are capable of delivering one cubic foot of water per second against heads of 250 feet and 300 feet respectively. These units are designed and connected up so that they may be run in series giving the above discharge at 550 feet head or they may be run in parallel giving double the discharge at a

lower head. Each pumping unit consists of two two-stage pumps mounted on a common base and driven by a single pulley and the construction and piping are such that each two-stage pump may be driven separately or that all may be driven, discharging separately one cubic foot per second at about 125 feet head through each of four independent pipes, or else the pumps may be run in series or in parallel. The scheme is thus well adapted to laboratory work and under the heads used on reaction turbines over six cubic feet per second may be obtained.

The laboratory further contains a large vertical steel tank 5½ feet diameter by 34 feet high with arrangements for the attachment of nozzles and other mouth pieces, etc. Connections are also arranged for reaction turbines, the tank acting as a reservoir.

The discharge from the turbines or nozzles is measured in a weir tank nearly 6 feet wide and 21 feet long containing a contracted weir 4½ feet wide. This weir may be calibrated by two weighing tanks each having a capacity of about 240 cubic feet.

There are three reaction turbines and two impulse wheels all ready for experiment, the power being measured by brakes and the water by weir or orifices. Amongst the reaction turbines may be mentioned the one designed and built by Escher Wyss and Co., specially for the laboratory.

Smaller orifice and weir tanks each about 3 x 3 x 12 feet with necessary measuring tanks are arranged for instruction in coefficients of various kinds and practice with weirs and orifices.

A Venturi meter and other meters, also hydraulic rams and similar devices are available for testing, and good facilities have been arranged for investigating friction and other properties of pipes and fire hose.

For special investigations on turbine and centrifugal pumps, other pumps in addition to those already described have been arranged.

The basement of the laboratory contains an open trough 5 feet wide about 110 feet long with a large weir at one end. It is intended to use this trough for experiments on the flow in open channels, for measurements of large discharges by means of the weir, and for experiments with current meters and Pitot tubes.

Numerous pieces of smaller apparatus together with all instruments required have also been provided, and the laboratory equipment is believed to be very complete.

DONATIONS TO THE THERMODYNAMIC AND HYDRAULIC LABORATORIES.

The following donations to the equipment of the laboratories have been made through the kindness of those mentioned.

50 h.p. Wheeler Surface Condenser, presented by Mr. F. M. Wheeler, New York.

Blake Feed Pump, presented by the manufacturers.

6 inch New American Turbine, presented by Wm. Kennedy & Sons, Owen Sound, Ont.

Two Crown Water Meters, presented by the National Meter Co., New York, through Mr. M. Warnock, Toronto.

Rock Drill presented by Sullivan Machinery Co., New York, through Mr. A. E. Blackwood, '95.

Marine Gasoline Engine, presented by Canadian Fairbanks Co., Montreal.

Two engines with different types of valve, presented by Messrs. E. Leonard & Sons, London, Ont.

In addition to the above, other firms have materially assisted by offering apparatus at cost price, among whom may be specially mentioned, The Canadian Rand Drill Co., Sherbrooke, Quebec.

PHYSICAL LABORATORIES.

The optical laboratory is equipped with Weinhold optical benches and accessories for determining the constants of mirrors and lenses and for demonstrating the construction and use of telescopes, mirrors, field glasses, microscopes, etc. There is also a full equipment of optical instruments including telescopes, microscopes, field glasses, comparators, spectrometers, saccharimeters, level tester, photometer, focometer, dynameter, cathetometer, polariscope, projecting lanterns, etc.

The photographic laboratory is supplied with several cameras for viewing, copying, enlargement and reduction, a spectroscopic camera and an electric blue printing machine and the necessary dark rooms.

The hydrostatic laboratory contains a supply of various forms of hydrometers, hydrostatic balancers, Jolly balance, Mohr's balance, hydrostatic press, vacuum pumps, gauges, etc.

The heat laboratory is equipped with a full supply of calorimeters and accessories for determinations of latent and specific heat. There is also a steam boiler, and jacketed tubes for determinations of the expansion of metal rods, air thermometer, apparatus for verification of Boyle's law and pressure and boiling

point curve and for determination of the absolute expansion of mercury. Callendar's apparatus for determination of the mechanical equivalent of heat.

The acoustical laboratory is provided with sonometer, siren, forks ordinary and electric, Lissajous' and Melde's apparatus, organ pipes of various forms, manometric flame apparatus and a special equipment for work in architectural acoustics consisting of torsion chronograph, electro-pneumatic wind chest and standardized organ pipes and other accessories.

STRENGTH OF MATERIALS LABORATORY.

This laboratory is intended for the scientific and commercial testing of the materials of construction such as iron, steel, timber, concrete and masonry.

It is supplied with the following:

An Emery 50-ton hydraulic machine, built by Wm. Sellers & Co., of Philadelphia, for making tests in tension and compression.

A 100-ton screw power machine, built by Riehle Bros., Philadelphia. It is designed for making tests in tension, compression, shearing and cross-breaking and will take in posts 12 feet long and beams up to 18 feet in length.

A Riehle 10-ton screw power universal testing machine.

A Riehle 50-ton screw power universal testing machine.

A 15-ton single-lever machine, built by J. Buckton & Co., Leeds, England.

A torsion machine, built by Tinius Olsen & Co., Philadelphia, for testing the strength and elasticity of shafting. This machine will twist shafts up to 16 feet in length and 2 inches in diameter.

A Riehle transverse testing machine of 5,000 pounds capacity, adapted to specimens up to 48 inches in length.

A Riehle compressometer, with spherical seat attachment for the adjustment of specimens having slightly non-parallel faces. This compressometer will receive specimens up to 10 inches in length.

A 20,000 pound Olsen, hand power, wire testing machine, especially fitted for testing wooden columns with both fixed and pivoted ends.

A Riehle abrasion cylinder, built to the standard required by the National Brick Makers' Association, adopted in 1901.

A large number of extensometers of the usual degree of precision. These include the Bauschinger, Martens, Unwin, Marshall,

Riehle, Johnson, Henning (recording) and other types. In addition there are the usual scales, micrometers, telescopes and reflectors, voltmeters for the determination of metallic contract, and such other appliances as are necessary in the making of precise measurements.

The shop is equipped with a number of high-class machine tools specially fitted for reducing the specimens to the requisite shapes and dimensions with a minimum of hand labour. It is also supplied with the necessary appliances for making ordinary repairs and for making apparatus for special experiment and original investigation.

CEMENT TESTING LABORATORY.

This laboratory is fitted with all the ordinary moulds, sieves, balances, burettes, steaming and drying tanks, tables and other appliances necessary in making the usual physical tests of a Portland cement. In addition there are the following:—

A Riehle 2,000 lb. machine, fitted for either tension or compression.

A 2,000 lb. Riehle shot machine for tension.

A 2,000 lb. Fairbank's shot machine for tension.

A 1,000 lb. Olsen automatic shot machine fitted for tests in either tension or cross-breaking.

An extra large Faija's hot bath apparatus.

METROLOGICAL LABORATORY.

The department of surveying and geodesy is provided with all the ordinary field instruments, such as transits, levels, compasses, micrometers, sextants, planimeters, plane tables, tapes, chains, etc., with which is carried on the instruction in practical field operations as detailed elsewhere.

A small laboratory is also established containing the necessary instruments for the refined measurements of geodetic surveying; as, a standard yard and metre, a Rogers 10 foot comparator, a Kater's pendulum with vacuum chamber, a level trier, micrometer, microscopes, etc.

There is also a geodetic observatory in connection with this department in which students of the fourth year are instructed in, taking observations for time, latitude, longitude, and azimuth by the precise methods used in connection with a geodetic survey. It contains a 10 inch theodolite and zenith telescope by Troughton & Simms; an astronomical transit instrument and an 8 inch theodolite by Cooke; an electro-chronograph; a Howard astronomical clock; a Dent sidereal break-circuit chronometer; airtmometers, etc.

ELECTRICAL LABORATORIES.

Galvanometer laboratory:—This laboratory is equipped with numerous galvanometers, resistance boxes, bridges, potentiometers, standard resistances, standard cells, etc., and much other usual and special apparatus for varied electrical experiments of the more delicate variety.

This laboratory also contains apparatus for studying the various types of arc and incandescent lamps.

Another room is fitted more especially for calibration of electrical instruments for alternating and direct currents. About one hundred and twenty portable measuring instruments are available for students' use, also standard instruments, including Weston laboratory standards, Kelvin balances, etc., with which the portable instruments may be compared.

Machine Laboratory:—This laboratory contains twenty-five dynamos and motors varying in capacity from two to twenty kilowatts, adapted for experiments illustrating the properties of compound, shunt and series dynamos and motors, arc machines, etc. Switch-boards, numerous rheostats, lamp racks, starting boxes, circuit breakers, flexible cables, brakes, torsion dynamometers, tachometers, etc., are available for use with the machines. The students are supplied with the best standard portable ammeters and voltmeters obtainable.

This laboratory also contains two 15 kw., 25 cycle and two special 15 kw., 60 cycle General Electric polyphase revolving field alternators direct driven by motors, two rotary converters of 10 kw. and 5 kw. capacity, a $7\frac{1}{2}$ kw. General Electric polyphase induction motor with slip ring rotor, Westinghouse three phase squirrel cage induction motors, Wagner single phase motor, Westinghouse single phase series motor, Westinghouse alternator, and several three phase and single phase induction motors; also transformers, reactive coils, and other details as in the direct current section of the laboratory described above for experiments on the properties of alternating currents and alternating current apparatus in general. A constant-current transformer with its load of six series arc lamps, three oscillographs for studying wave forms, a high potential transformer and a mercury arc rectifier may also be mentioned. The students are supplied with Weston, Westinghouse and Thomson portable instruments for measuring purposes.

Magnetic Laboratory:—A room is fitted with appliances for the study of saturation and hysteretic properties of samples of iron and steel. The room also serves for exercise in winding models of direct current armatures, alternators, etc.

CHEMICAL LABORATORIES.

The Chemical laboratories are situated in the western half of the Chemistry and Mining building, on the first and second floors. The rooms are large and well lighted, and are supplied with the usual modern equipment.

The first and second year laboratory for qualitative work has accommodation for 112 students, each working space being supplied with water, gas and fume cupboard. The laboratory for quantitative analysis will accommodate 48 students, and is supplied with commodious fume cupboards and all necessary apparatus. A laboratory with working places for 36 is provided for the students engaged in the study of technical chemistry; it is equipped with appliances for the preparation and testing of chemical products. Each of these laboratories has its own balance room adjoining, furnished with instruments from the best makers and adapted to the particular objects in view.

In addition there are rooms set apart for gas analysis, electrolytic analysis, calorimetry, and a specially constructed fireproof laboratory for combustion, crucible and bomb furnaces. Each of these laboratories is supplied with apparatus of the most approved design, providing excellent facilities for the prosecution of work in analytical and technical chemistry.

ELECTROCHEMICAL LABORATORIES.

The Electrochemical laboratories which are situated in the Chemistry and Mining building are provided with special facilities for electrolytic work, including a large storage battery and electroplating dynamo with tanks as well as a complete set of apparatus and electrical measuring instruments. The experimental work on electric furnaces is performed in two rooms specially equipped for this purpose with rheostats and switchboard connections to a 120 kw. D. C. generator, which supplies the current required.

GEOLOGICAL AND MINERALOGICAL LABORATORIES.

In the Chemistry and Mining building on College Street the University possesses a modern laboratory for Geology and Mineralogy.

Brief courses are given in laboratory work, especially in personal examination of type sets of rocks, fossils, minerals and crystal models. These laboratory exercises serve to illustrate the introductory didactic instruction.

For the encouragement of pure crystallography the laboratories are supplied with goniometers of the various types, crystal models, appliances for the cutting of oriental crystal sections and for the physical examination of the same. Practical Petrography is carried on in rooms provided with type sets of rocks, both macroscopic and microscopic. Advanced students are taught to make thin sections of rocks and fossils and to study them microscopically. Students in Palæontology are given instruction in the preparation of material for study and are afforded an opportunity of examining type series of specimens.

The laboratory for the preparation of thin sections of rocks, minerals and fossils is provided with electric diamond saws and grinding appliances for the various types of work incidental to the preparation of thin sections and museum material.

A room is also provided for advanced work in Cartography and Geological Surveying.

The departments possess 28 petrological microscopes and 5 of other types so that it is now possible to provide advanced students with instruments and sets of thin sections for their own especial use. The blowpipe laboratory contains 156 lockers, especially designed for apparatus for students.

ASSAYING LABORATORIES.

Two assaying laboratories are situated in the basement of the Chemistry and Mining building, one has a floor space of 17 feet x 47 feet, and the other 28 feet x 37 feet. Adjoining each is a room 15 feet x 11 feet, with the necessary equipment for the wet work in connection with assaying. Common to both laboratories is a balance room furnished with gold balances set on a concrete pier. Each of the laboratories contains a number of melting holes (13 in all) for crucible fusions, various gas furnaces both for crucibles and muffles, and a large brick muffle furnace.

The furniture comprises lockers for the students, tables for the pulp balances and the necessary cabinets and shelving.

Adjoining the assay laboratories is a preparation room (19 feet x 13 feet) which is equipped with a motor, crusher, pulverizer, sample grinder and all the necessary hand pulverizers, screens, etc., for preparing ores for assay.

The metallurgical room is 40 feet x 21 feet and is equipped at present with a reverberatory furnace for roasting sulphide and arsenical ores, fume cupboard, lockers, tables, etc., and is intended for hydro-metallurgical work.

MILLING AND CONCENTRATING PLANT.

A detached building 72 feet x 70 feet in area, contains the milling and concentrating equipment. It is heated, lighted and supplied with power from the main building, and is divided into two parts. The greater part, with 72 feet x 53 feet floor space, and 22 feet high, contains the milling and concentrating equipment. The machinery for the former operations consists of a five-stamp battery erected on concrete foundation, Challenge ore feeder, amalgamating plates, Wilfley table for concentration, a clean up pan, steel settling tanks, a steel tank suspended from the roof girders to furnish a constant supply of water, and a track with travelling crawl to transport ore. This is driven by a 15 horse power motor.

The concentrating part consists of a set of five revolving trommels for wet screening, four three-compartment jigs, a trough classifier delivering three products, and two revolving buddles, Wilfley Slimer, Deister Slimer, Richard's Pulsating Classifier, Richard's Pulsating Jig, besides experimental apparatus of various kinds for experimenting on the falling rates of ore particles, the settling of slimes, surface tension action in grease and flotation methods, etc. The waste products run to the same settling tanks as the tailings from the stamp battery. The ore is handled by a travelling crawl. All the machinery in this part is driven by a 10 horse power motor.

The plant throughout is intended mainly for experimental purposes and is made of such a size that numerous experiments can be carried out on small quantities of ore. Tests can also be made on lots of one or two tons.

The other part of the milling building, with 72 feet x 17 feet floor space and 15 feet high, is divided into four separate rooms. The largest of the four rooms has an area of 476 square feet and is devoted to the crushing and pulverizing of the ores preparatory to their treatment in the milling and concentrating room. It is isolated in order to confine the dusty operations as far as possible to this one room, and is equipped with a gyrating crusher of Hadfield's make, a set of Hamilton rolls 16 inches by 12 inches, platform scales for weighing ore, a jib crane, pulleys, buckets, etc., for handling the rock. An adjoining room contains a 30 h.p. motor for driving the machinery of the crushing department, and storage bins for ore, work bench, etc. Another room with 17 feet x 15 feet floor space, is furnished with a magnetic separator of the Rowan-Wetherill make, driven by its own motor.

One room of the same size as the above remains available for future additions.

ORE DRESSING AND ASSAY LABORATORIES.

The Coniagas Mines Ltd., through the General Manager, Mr. R. W. Leonard, has supplied the Mill Building with a full-sized Wilfley Slimer free of cost.

The Deister Concentrator Co. of Fort Wayne, Indiana, have supplied free of cost one of their latest models of Slime Tables.

The Denver Engineering Works of Denver, Colorado, have supplied at below cost of manufacture one Richard's Pulsating Jig and one Richard's Pulsating Classifier.

F. W. Braun of Los Angeles, California, and H. E. T. Haultain, have jointly presented to the Assay Laboratory two Electrolytic Assaying Cabinets.

MUSEUM.

The Geological and Mineralogical Museum of the University is open to students of the Faculty of Applied Science, and is also accessible to the general public from 2 to 5 p.m. throughout the year.

The Museum is situated in the south-east corner of the ground floor of the Chemistry and Mining building, and may be entered from the door at that corner of the building.

The southern half of the room is occupied by the cases of the palæontological collection in which are arranged a large series of fossils. These specimens are placed so as to display together the great groups of animals, while the minor divisions are based on stratigraphical grounds. Particularly worthy of note are the fine series of Crinoids and Cystids and the type specimens of Eastern Canada Cambrian fossils. A large part of this collection is due to the generosity of Dr. B. E. Walker and Mr. Wm. Mackenzie. On the walls of the museum are being placed some excellent specimens of large extinct vertebrates.

To the north of the fossil collection is the Ferrier Cabinet of Minerals containing good examples of nearly all the minerals known to science, as well as a special case with specimens of the various minerals from the Cobalt Mining District.

The northern part of the room is occupied by twenty cases exhibiting all the important rocks both igneous and sedimentary which go to make up the crust of the earth.

Around the walls are placed cases containing the chief economic mineral products arranged in accordance with their practical application to human activities. This collection is particularly rich in specimens from Ontario localities and includes most of the material formerly exhibited in the Engineering building.

LIBRARY.

Rooms have been set apart in the Engineering and the Chemistry and Mining buildings for the housing of such periodicals and other literature of the University Library as is of special interest to the students of this faculty.

SOCIETIES.

THE ENGINEERING SOCIETY OF THE UNIVERSITY OF TORONTO.

Officers for 1910-1911.

<i>President</i>	A. D. Campbell.
<i>1st Vice-President</i>	R. L. Dobbin.
<i>Vice-Pres. Civil & Archl. Secs.</i>	M. H. Murphy.
<i>" Mechanical & Elec. Secs.</i>	F. H. Downing.
<i>" Chemistry & Mining Secs.</i>	E. Freeland.
<i>Recording Secretary</i>	E. J. Ritchie.
<i>Corresponding Secretary</i>	A. H. Munro.
<i>Treasurer</i>	W. A. Gordon.
<i>Permanent Secretary</i>	H. Irwin.
<i>Curator</i>	E. V. Chambers.
<i>Fourth Year Representative</i> ...	J. McNiven.
<i>Third Year Representative</i>	W. Curtis.
<i>Second Year Representative</i> ...	E. Gray.
<i>First Year Representative</i>	To be elected.

The Society meets every second Wednesday during the academic year. Papers are read, and discussions are held on engineering subjects. The Society publishes a pamphlet monthly during the academic year, containing the best papers read at the meetings. A supply department is conducted by the Society, on a co-operative plan through which instruments, drafting supplies, stationery, etc., may be purchased at a low cost.

UNIVERSITY OF TORONTO ELECTRICAL CLUB, 1910-1911.

<i>President</i>	N. Porter.
<i>Secretary-Treasurer</i>	E. A. Thompson.

The Society meets every second Thursday evening during the academic year for the discussion of papers relating to mechanical and electrical engineering problems too technical for consideration in the Engineering Society. The membership is limited to members of the senior and final years.

ATHLETIC ASSOCIATION OF THE FACULTY OF APPLIED SCIENCE.

EXECUTIVE COMMITTEE, 1910-1911.

<i>Honorary President</i>	Dean Galbraith.
<i>President</i>	C. E. Richardson.
<i>Vice-President</i>	R. S. Bell.
<i>Secretary-Treasurer</i>	To be elected.
<i>Fourth Year Representative</i>	N. J. Harvie.
<i>Third Year Representative</i>	W. H. Wylie.
<i>Second Year Representative</i>	F. J. Mulqueen.
<i>First Year Representative</i>	To be elected.

The Athletic Association has full control over all athletic clubs using the name of the Faculty of Applied Science. The Executive Committee has power to suspend any one from the privileges of membership in the Association for any breach of its regulations, and controls the finances of all athletic clubs in the aforesaid Faculty. The annual membership fee of this Association is fifty cents.

No other moneys are collected for the support of athletics in the Faculty of Applied Science without the sanction of the Executive Committee.

RUGBY FOOTBALL.

The Mulock Cup, which was presented by Sir Wm. Mulock, M.A., LL.D., to the University of Toronto Rugby Football Club for inter-college competition, brings out each year a large number of contestants from the University and affiliated colleges.

RUGBY FOOTBALL CLUB OF THE FACULTY OF APPLIED SCIENCE.

Officers 1910-11.

<i>Honorary President</i>	T. Loudon.
<i>President</i>	Hugh C. Ritchie.
<i>Vice-President</i>	W. C. Foulds.
<i>Secretary-Treasurer</i>	F. S. Milligan.
<i>Manager senior team</i>	J. McNiven.
<i>Captain senior team</i>	R. L. Dobbin.
<i>Manager junior team</i>	N. Lorimer.
<i>Captain junior team</i>	A. R. McPherson.

ASSOCIATION FOOTBALL.

In order to encourage Association Football on the College campus, the Faculty of the University of Toronto presented a cup, known as the Faculty Cup, to the Inter-College Association Football Club for annual competition among University and affiliated colleges.

ASSOCIATION FOOTBALL CLUB OF THE FACULTY OF APPLIED SCIENCE.**(Winners of Faculty Cup.)****Officers for 1910-11.**

<i>Honorary President</i>	Prof. C. H. C. Wright.
<i>President</i>	W. C. Blackwood.
<i>Vice-President</i>	J. T. King.
<i>Manager of seniors</i>	A. D. Campbell.
<i>Captain of seniors</i>	C. P. Sills.
<i>Manager of juniors</i>	W. H. Wylie.
<i>Captain of juniors</i>	G. C. Hoshal.

HOCKEY.

The trophy which is competed for annually among the Colleges in hockey is known as the Jennings Cup, and is the gift of the late W. T. Jennings, Mem., Inst. C. E.

HOCKEY CLUB OF THE FACULTY OF APPLIED SCIENCE.**Officers for 1910-11.**

<i>Honorary President</i>	Dr. Ellis.
<i>President</i>	A. E. Alison.
<i>Vice-President</i>	A. D. Campbell.
<i>Secretary-Treasurer</i>	H. C. Ritchie.
<i>Manager senior team</i>	W. C. Foulds.
<i>Manager intermediate team</i>	O. F. Coumans.
<i>Manager junior team</i>	J. J. Phillips.

TRACK CLUB.**Officers for 1910-11.**

<i>Honorary President</i>	P. Gillespie.
<i>President</i>	L. A. Wright.
<i>Secretary-Treasurer</i>	J. M. Gibson.
<i>Fourth Year Representative</i> ...	G. E. Woodley.
<i>Third Year Representative</i>	C. S. Cameron.
<i>Second Year Representative</i> ...	E. R. Bonter.
<i>First Year Representative</i>	To be elected.

OFFICERS OF THE 2nd FIELD COMPANY CANADIAN ENGINEERS.

<i>Officer Commanding</i>	Major W. R. Lang.
<i>Captain</i>	S. P. Biggs.
<i>Acting Quartermaster</i>	T. C. Irving, Jr.
<i>Lieut. (Acting Adj.)</i>	H. N. Gzowski.
<i>Lieutenant</i>	C. S. L. Hertzberg.
<i>Lieutenant</i>	H. F. H. Hertzberg
<i>Supernumerary</i>	D. C. Raymond.
<i>Medical Officer</i>	J. W. Barton, M.D.

UNIVERSITY OF TORONTO ATHLETIC ASSOCIATION.

Directorate.

<i>Honorary President</i>	R. A. Falconer, D. Litt., LL.D.
<i>President</i>	Prof. A. T. DeLury.
<i>Vice-President</i>	T. R. Hanley.
<i>Secretary-Treasurer</i>	Jas. W. Barton, M.D.

Directors.

Prof. C. H. C. Wright.	W. D. Foulds.
Dr. W. B. Hendey.	F. S. Park.
Jas. S. Bell.	L. A. Wright.

The Athletic Association is now the paramount body in University athletics, and has entire jurisdiction over the athletic clubs using the University name, and over their finances, members and policy, subject to the University authorities. Henceforth no financial agreement can be entered into by any such club without the sanction of the Directorate. No expenditure of any kind in connection with any such club can be made without the written order of the Secretary-Treasurer of the Directorate.

GYMNASIUM AND ATHLETIC GROUNDS.

"The University gymnasium was completed and equipped in 1893. It is fully provided with the best and most modern appliances for physical culture, and contains a running track, shower baths and swimming bath, besides the necessary dressing rooms and other conveniences. A competent instructor in gymnastics is in constant attendance to superintend and direct the exercises of students. In addition to the lawn in front of the Main University Building and a campus in the rear, a large plot of ground on Devonshire Place has been set apart as an athletic field. By this addition the

facilities for football, cricket, tennis and other out-door athletic sports are doubled, as compared with previous accommodation; and by these grounds, in conjunction with the gymnasium, ample opportunity is afforded to all students for healthful exercise and physical development. To assist in meeting the expenses of the gymnasium, a nominal annual fee is imposed on those who avail themselves of its advantages. The supervision of all athletic matters has been entrusted by the Council to an Athletic Board, consisting of six members appointed from the Faculty and officers of the Athletic Association. All applicants of clubs for the use of grounds must be made annually to this Board. All such applications must be accompanied by a list of officers. In the case of new clubs the list of officers must be accompanied by particulars as to the organization and objects of the club making applica-

STUDENTS' UNION BUILDING.

"In 1894 additions were made to the front of the building in which the gymnasium is situated, consisting of a large hall for public meetings, a reading room and committee rooms. This additional accommodation is available for the work of the various students' societies, and for academic purposes. Applications for the use of rooms, accompanied by a list of officers and a copy of the constitution of the society making application, must be made, through the President, to the joint committee of the Councils on Gymnasium and Students' Union Building, at the beginning of the season, or from time to time as occasion requires. Arrangements have also been made by which recognized societies may obtain the use of committee rooms on application to the janitor of the Students' Union Building."

FACULTY OF APPLIED SCIENCE.

YOUNG MEN'S CHRISTIAN ASSOCIATION.

The Y.M.C.A. of the Faculty of Applied Science was organized January 27th, 1905, and forms an integral part of the University of Toronto Y.M.C.A., which is a federation of the Association of the various Colleges and Faculties of the University. The object of the Association is to develop a true Christian manhood and to help the students in whatever way possible.

<i>Honorary President</i>	H. W. Price.
<i>President</i>	J. H. Billings.
<i>Vice-President</i>	M. Kirkwood.
<i>Treasurer</i>	R. B. Chandler.
<i>Recording-Secretary</i>	D. J. Thompson.

STUDENTS IN ATTENDANCE.

SESSION 1909-1910.

First Year.

MATRICULATED STUDENTS.

1 Abendana, E. M.	1 Cook, G. M. ....St. Thomas
Port Antonio, B.W.I.	1 Coombs, J. A. ....Blyth
7 Acton, J. C. ....Toronto	4 Coon, B. R. ....Toronto
5 Adams, R. ....Toronto	7 Corbould, C. E. B.
7 Allen, R. J. ....Wallaceburg	New Westminster, B.C.
3 Anderson, S. A. ...Peterboro'	2 Coste, D. ....Toronto
1 Avery, C. R. ....Toronto	1 Cotton, C. P. ....Toronto
2 Bach, W. A. ....Toronto	1 Cuzner, A. E. ....Ottawa
1 Baird, F. ....Woburn	4 Dack, S. E. ....Bedford Park
4 Baldwin, L. C. M. ...Toronto	1 Dates, A. J. ....Owen Sound
2 Banks, H. R. ....Toronto	7 Davidson, W. M. ....Toronto
1 Beatty, F. W. ....Pembroke	3 Davison, H. D.
1 Beatty, W. B. ....Sarnia	Bridgewater, N.S.
2 Bell, C. A. ....Toronto	1 Davison, R. F.
2 Binns, R. E.	Bridgewater, N.S.
Port Antonio, B.W.I.	7 Deitch, E. L. ....Toronto
1 Black, B. S. ....Toronto	2 Delahey, W. A. ....Pembroke
7 Black, H. M. ....Acton (West)	
4 Blackwell, W. R. ...Peterboro'	2 Diamond, R. W. ....Toronto
2 Blain, D. ....Toronto	7 Duncan, W. G.... Port Dover
1 Blyth, J. M. ...Orchard, P.O.	2 Dynes, R. F. ....Moorefield
1 Bogue, A.H..Moose Jaw, Sask.	7 Eaton, G. L. ....Grimsby
5 Bonham, A. R. ....Toronto	2 Emmerson, E. R..Port Arthur
3 Bonter, E. R. ....Trenton	3 Fairhead, N. A. ....Toronto
1 Bowman, H. H., Southampton	1 Fansher, P. L. ....Florence
1 Boyd, M. De G....Bobcaygeon	1 Fellowes, K. C. ....Toronto
4 Brown, B. ....Toronto	7 Ferguson, D. G....St. Thomas
2 Buchanan, T. R. ...Thessalon	1 Ferris, C. B. ....Eglinton
7 Buchanan, W. B. ...Vandeleur	1 Fiddes, F. R. ....London
3 Burrows, B. H. A. ...Toronto	1 Fleming, D. H. ...Pele Island
2 Caldwell, W. B. ....Toronto	2 Fleming, J. S. ....Toronto
5 Cameron, W. E. ....Cornwall	1 Folliott, W. G. ....King
7 Campbell, H. A. ....Toronto	3 Foote, F. F. ...Port Dalhousie
2 Carlyle, R. T. ....Toronto	3 Forgie, L. C. ...Buffalo, N.Y.
3 Carmichael, R. M. ...Kenora	1 Fowlds, E. S. ....Hastings
1 Carrie, M. ....Owen Sound	3 Frogley, H. W. ....Toronto
2 Chambers, E. V. ...Woodstock	1 Galbraith, J. S. ....Toronto
1 Christner, J. C. ....Innerkip	7 Gamay, R. S. ....Maxwell
2 Clark, H. ....Toronto	1 Gardner, D. B. ....Toronto
6 Clarkson, G. E. ....Toronto	2 Garnham, W. H...Port Rowan
7 Clegg, B. D. ....Peterboro'	1 German, A. M. ....Welland
1 Clerke, A. W.	2 Gilmore, L. C...St. Catharines
Launceston, Tasmania.	2 Gray, A. G. ....Toronto
	3 Gray, A. J. ....Victoria, B.C.

- 1 Gray, E. R.Eden
 7 Hagaman, E. K.Oakville
 7 Harris, H. C.Kingsville
 1 Hawley, H. A.Toronto
 3 Hayden, J. M.Cobourg
 1 Hayman, A. W.London
 1 Hearn, R. L.Toronto
 1 Heinonen, H. J.Toronto
 3 Henry, R. A.Barrie
 4 Higinbotham, H. T.
 Lethbridge, Alta.
 1 Holden, O.Toronto
 7 Hooey, H. R.Toronto
 3 Hope, J. C.Toronto
 1 Howard, J. T.Toronto
 7 Howlett, T. F.Howlett
 5 Huether, J. C.Berlin
 2 Hughes, B. H.Toronto
 2 Hutcheson, W. B.North Bay
 1 Ireson, E. T.Toronto
 7 Jefferson, K. A.Arcola, Sask.
 1 Johnson, G. R.Ferne, B.C.
 7 Johnston, H. J.Toronto
 2 Jones, R. A.Toronto
 1 Kay, J.Toronto
 1 Keefer, N. G.Toronto
 7 Kilmer, C. E.Toronto
 1 Laing, J. S.Essex
 1 Lamb, T. F.St. Johns, Nfld.
 7 Leslie, A.Owen Sound
 7 Levy, C. C.
 Savanna-la-mar, B. W. I.
 2 Levy, M.Toronto
 1 Levy, T.Toronto
 4 Livingston, H. D.Brantford
 7 Lorimer, N. H.Toronto
 5 Macdonald, G. G.Toronto
 2 Macdonald, C. E.Toronto
 2 Macdonald, A. G.Dawson, Y.T.
 3 MacGregor, R. C.Toronto
 7 MacKenzie, H. A.Hyde Park

 1 MacKenzie, H. R.
 Scotsburn, N.S.
 6 MacLachlan, K. S.Toronto
 7 MacQuarrie, A. H.Valetta
 1 MacTavish, W. H.VanCamp
 3 McCaul, J. G.Edmonton, Alta.
 4 McConnell, R. S.Toronto
 1 McFaul, W. L.Owen Sound
 1 McGill, S. B.Toronto
 3 McIntyre, J. S.Peterboro'
 2 McKenzie, R. J.Niagara Falls
 2 McLean, J. G.Chatham
 1 McPherson, A. R.Petrolia
 3 McQueen, P. H.Chesley

 1 Mattocks, F. C.Toronto
 2 Meahan, P. W.
 Bathurst Village, N.B.
 7 Mickler, G. J.Preston
 2 Mills, F. L.Toronto
 3 Mitchell, M. W.Toronto
 1 Moore, T. R.Toronto
 3 Moyer, J. W.St. Catharines
 1 Murdie, W. C.Winthrop
 1 Murphy, D. E.
 New Westminster, B.C.
 7 O'Donnell, L.Toronto
 5 Otto, C. J.Toronto
 7 Peart, J. W.St. Thomas
 1 Perkins, J. F.Petrolia
 1 Perron, E.
 Metabetchouan, Que.
 1 Phillips, J. J.Whittington
 5 Phillips, W. E.Toronto
 3 Purdy, A. K.Toronto
 1 Quail, H. C.Toronto
 7 Ratz, E. G.Elmira
 6 Relyea, P. J.Cornwall
 1 Richardson, A. A.
 Grenfell, Sask.
 7 Richardson, H.Bagot, Man.
 1 Riddell, J. M.
 Campbellton, N.B.
 7 Robertson, R.Jackson
 7 Rous, C. C.Toronto
 7 Russell, C. H.Waubauskene
 7 Russell, W. E.Waubauskene
 1 Rutherford, F. S.Bolton
 7 Scarlett, A. A.Toronto
 3 Scott, J. G.St. Catharines
 1 Sewell, L.Cedar Grove
 3 Sharp, M. C.Toronto
 3 Shaw, K. E.Wallaceburg
 3 Sims, F. R.New Durham
 2 Sinclair, D. G.Sarnia
 1 Sinclair, R. B.Toronto
 1 Slattery, B. P.Ottawa
 7 Smith, E. L. C.Toronto
 1 Smyth, G.Merritton
 4 Soper, R. W.Port Perry
 1 Spellman, W. A.Hastings
 5 Stewart, E.Collingwood
 1 Strathearn, R. G. M.
 Midland
 7 Strathy, J. M.Port Arthur
 7 Tackaberry, S. G.Toronto
 1 Tasker, R.Toronto
 7 Thomas, H. T.Queensboro
 1 Thompson, J. M.Mount Healy
 2 Thompson, W. K.Toronto
 3 Thomson, D. J.Owen Sound

7 Tillson, G. D. ....Tillsonburg	NON-MATRICULATED STUDENTS.
7 Torrance, T. E. ....Galt	7 Allan, N. F. ....Toronto
5 Trent, S. ....Toronto	1 Campbell, L. L. ...Orangeville
2 Trow, R. M. ....Stratford	7 Clubine, E. C. ....Newmarket
1 Ure, W. G. ....Woodstock	2 Curry, W. H. ....Toronto
1 Von Gunten, C. F....Blenheim	2 Earls, E. J. ....Toronto
5 Walton, B. ....Peterboro'	1 Goodman, H. M. ....Toronto
2 Watson, G. E. ....Toronto	7 Greenwood, A. H. ....St. Catharines
2 Watt, S. K. ...St. Catharines	
3 Watts, R. E. ....Brantford	3 Kerr, A. E. ....Toronto
3 Weber, H. L. ....Collingwood	1 McLaughlin, J. ....Ottawa
3 Webster, C. A. ....Toronto	3 McMillan, E. A. ...Hillsburg
4 Webster, H. ....Toronto	1 Mulqueen, F. J. ....Toronto
7 Weir, D. H. ....Cathcart	2 Mutch, D. A. S. ....Toronto
7 Whately, H. E. ....Thornbury	1 Omand, W. M. Lyleton, Man.
7 Wigle, J. H. ....Kingsville	1 Pennington, C. W. ...Dundas
6 Williams, M. J. ....Toronto	1 Pilley, H. C. ....Bradford
2 Wilson, H. F. ....Cobalt	7 Rankin, G. A. ....Toronto
1 Winters, W. S. ....Toronto	7 Raymond, H. ...Lipton, Sask.
1 Worthington, A. N. ...Toronto	1 Ritchie, E. J. ....Toronto
7 Wright, A. J. ....Washington	1 Simpson, L. F. ....Hamilton
5 Yarker, J. A. ....London	2 Stibbard, R. F. ....Eglinton
7 Young, R. B...Brandon, Man.	1 Wood, R. F. B. ...Halifax N.S

Second Year.

5 Aitken, J. ....Brantford	1 Clarke, T. W. ....Toronto
1 Allan, L. B. ....Toronto	2 Clarke, J. E. ....Toronto
1 Alison, A. E. ....Toronto	3 Cleary, F. S. ....Windsor
1 Badgley, L. A. ....Canfield	2 Cole, D. B. ....Toronto
1 Bartley, T. H. ....Toronto	3 Coleman, J. H. ....Banda
2 Batten, H. L. ....Toronto	5 Conway, M. E. ....Ottawa
3 Bell, R. S. ....Toronto	3 Cook, A. S. ....Ingersoll
1 Berkeley, G. L. ....Belleville	1 Cornell, C. W. ....Toronto
3 Billings, J. H. ....Leskard	1 Coumans, O. F. ....Chepstow
2 Bissett, J. R. ....Kincardine	1 Crouch, M. E., Rochester, N.Y.
3 Boswell, W. O. ....Toronto	3 Cruthers, W. M. ....Oakville
1 Bowman, F. ....Berlin	3 Cunerty, T. J. ....Toronto
3 Brackinreid, T. W. ...Toronto	1 Cunningham, C. H. ...Hamilton
3 Brereton, L. R. ....Toronto	2 Curtis, W. T.... ...Tillsonburg
1 Brickenden, F. M. ....London	1 Curzon, J. H. ....Toronto
2 Brock, W. M. ....Thamesford	3 D'Alton, F. K. ....Weston
1 Brouse, W. H. D. ....Toronto	4 Davidson, E. I. ....Toronto
3 Brown, H. ....Port Sydney	1 Davis, W. B. ....Ivy
2 Buchanan, N. S. ....Toronto	2 Davison, E. S. ....Bridgewater, N.S.
3 Cain, E. T. ....Sandford	
1 Cameron, C. S...Dawson, Y.T.	3 DeGuerre, F. C. ....Galt
1 Campbell, C. D. ....Preston	3 Delamere, R. D. ....Toronto
6 Chadwick, W. W. ...Hamilton	5 Doncaster, L. ....Toronto
1 Chandler, R. B. ....Stratford	3 Downing, F. H. ....Lucan
2 Charlton, O. W. N. ...Toronto	1 Dunbar, W. B. ...Dunbarton
1 Cherry, P. G. Winnipeg, Man.	5 Eckert, C. ....London
3 Chesnut, E. F. ....Toronto	2 Elliott, C. F. ....Toronto
1 Clark, H. J. ....Wellington	3 Elliot, J. A. ....Toronto
1 Clark, W. G. ....Owen Sound	3 Farquharson, W. ...Walkerton

- 1 Farrell, K. A.Toronto
 3 Farrelly, T. J.Alma
 1 Flook, S. E.Willowdale
 5 Frankel, E. L.Toronto
 2 Freeland, E. E.Toronto
 1 Freeman, J. R.Brighton
 3 Fuller, R. J.Watford
 1 Fyfe, H. D.Calgary, Alta.
 2 Godson, H. P.Toronto
 5 Gooderham, J. L.Toronto
 1 Grafton, S. G.Toronto
 3 Gravely, T. G.Toronto
 3 Green, R. E.Windham Centre
 2 Griffith, T. G.Toronto
 3 Hall, H. G.Woodstock
 1 Hamilton, G. M.Toronto
 1 Hamilton, J. R.Winnipeg, Man.
 2 Harcourt, H. E.Toronto
 2 Heebner, M. B.Lee, Mass.
 2 Helson, F. I.Lindsay
 3 Hill, H. R.Toronto
 3 Huehnergard, E.St. Jacobs
 1 Huff, A. J.Edmonton Alta.
 1 Hyatt, H.Toronto
 3 Janney, W. E.Galt
 1 Jarvis, R. H.Toronto
 4 Jessop, H. H.Toronto
 1 Jones, L. E.Calgary, Alta.
 1 Junkin, R. L.Toronto
 1 Kelly, E. A.Winnipeg, Man.
 3 Kelly, S. S.Lambeth
 3 Kirkwood, M.Toronto
 2 Lanning, J.Leading Ticksles, Nfld.
 1 Lawless, N.Toronto
 3 Lawrence, W. H.Watford
 1 Leadman, H. L.Medina
 2 Lieberman, M. I.Toronto
 3 Lillie, G. L.Oakville
 6 Long, A. L.Brooklyn, N.Y.
 1 Lowrie, A. W. P.Russell
 3 Lytle, L. B.Tralee
 1 MacBeth, R. E.Toronto
 3 MacColl, E. B.Glencoe
 1 Macdonald, F. M.Toronto
 3 Mackenzie, W. S.Woodstock
 1 MacLaurin, J. G.Vankleek Hill
 1 McAndrew, J. B.St. Catharines
 2 McDougall, A. C.Ottawa
 3 McEachren, J. A.Strathburn
 3 McElroy, R. W.Toronto
 3 McEwen, H. J.Brantford
 1 McFadyen, A. J.Balsover
 3 McGhie, W. G.St. Catharines
 3 McKenzie, D. A.Wawanesa, Man.
 3 McKirdy, W. S.Nipigon
 3 McLeish, A. G.Parkhill
 1 McLellan, R. A.Moose Jaw, Sask.
 2 McPherson, W. B.Toronto
 4 Madill, H. H.Toronto
 3 Martin, J. C.Ponsonby
 3 Meadows, C. A.Toronto
 2 Mickleborough, K.Regina, Sask.
 1 Millman, N. C.Toronto
 1 Mills, L. G.Toronto
 5 Mitchell, L. C.Meaford
 2 Morphy, J. A.Oshawa
 2 Murray, H. S.Cooksville
 1 Murphy, M. H.Toronto
 1 Nicholson, J. B.Hamilton
 3 Nixon, C. K.Toronto
 3 Noble, E. S.Toronto
 1 Northey, R. K.Toronto
 2 O'Flynn, W. A.Calgary Alta.
 1 Oke, W. V.Edmonton, Alta.
 2 Orr, J. A.Clarksons
 3 Parker, J. S.North Battleford, Sask.
 3 Parkin, J. H.Toronto
 1 Parkinson, N. F.Toronto
 1 Patterson, T. J.Stratford
 1 Patton, J. McD.Regina, Sask.
 3 Pearson, C. L.Toronto
 2 Pepler, S. J.Toronto
 3 Perrin, W. J.Wroxeter
 2 Pickard, R. T.Winnipeg, Man.
 3 Porte, E. H.Aylmer (West)
 1 Powell, J.Toronto
 1 Pratt, F. M.Ottawa
 4 Pullan, H.Toronto
 1 Quinlan, L. J.Stratford
 1 Ratz, J. E.Elmira
 1 Read, F. N.Owen Sound
 4 Reid, E. V.Toronto
 2 Richardson, W. A.Toronto
 1 Ritchie, J. E.Berkeley
 3 Robinson, J.Toronto
 1 Robinson, W. E.Winnipeg, Man.
 1 Roblin, H. L.London
 3 Rothery, L. W.Chester, W. Va.
 4 Rowe, T. L. F.Toronto
 1 Rowsell, H. V.Toronto
 3 Runciman, A. S.Stratford

3 Rust, F. C. ....Toronto	2 Waite, J. H. C. ...Port Hope
3 Rutley, F. G. ....Toronto	1 Walcott, W. D. Savanna-la-mar, B.W.I.
1 Salter, E. M. ....Toronto	3 Wallace, G. L. ...Greenbank
1 Scandrett, F. R. ...Belgrave	1 Wardell, A. ....Toronto
5 Scott, J. W. ....Toronto	1 Watson, F. Errol .....Toronto
3 Seaton, N. D. ....Springville	1 Watson, Fred. E. ....Toronto
4 Sheard, P. ....Toronto	3 Welford, P. G. Mont Clair, N.J.
1 Sibbett, W. A. ...Bracebridge	1 West, C. W. ....Campbellford
2 Sills, C. P. ....Seaforth	2 Wheler, A. G. ...Pittsburg, Pa.
1 Smith, K. H. ....Harrow	3 Wilkes, G. H. Winnipeg, Man.
1 Sneath, R. G. ....Toronto	5 Williams, E. R. ....Toronto
2 Somerville, J. E. ...Winthrop	3 Wilson, H. A. ....Glenora
3 Soules, L. V. ....Toronto	3 Wood, C. S. ....Sidney, B.C.
3 Squire, G. E. ...Fairlight, Sask.	2 Wood, G. A. ....Peterboro'
3 Steele, W. S. ....St. Thomas	3 Woods, W. H. ....Toronto
5 Stewart, A. E. ....Toronto	1 Worden, W. G. ...St. Thomas
3 Stewart, R. O. ....Welland	1 Wright, W. J. T. ....Toronto
3 Story, R. A. ...Wawanesa, Man.	1 Wrong, F. H. ....Windsor
1 Sutherland, D. ....Toronto	2 Wylie, W. H. ...St. Catharines
1 Szammers, C. F. ....Toronto	3 Wyman, H. K. ....Essex
3 Taylor, R. ....Toronto	3 Yorke, L. P. ....Belmont
1 Temple, J. B. ....Toronto	3 Young, A. ....Binbrook
3 Thomas, G. C. ....Barrie	1 Young, S. ....Owen Sound
1 Torrance, R. D. ....Guelph	1 Zinkan, W. E. ...Southampton
1 Tough, W. G. ....Toronto	
1 Van Alstine, A. G. ...Sarnia	
1 Vickers, N. ....Renwick	

Third Year.

2 Adams, J. H. ....Toronto	3 Chesnut, A. W. ....Toronto
3 ¹ Adams, O. F. ....Toronto	1 Chisholm, D. C. Winnipeg, Man.
3 Agnew, N. J. ....Stratford	1 Clark, H. S. ...Port Dalhousie
1 Amsden, W. G. ....Toronto	1 Claveau, J. A. Chicoutimi, Que.
3 ¹ Archer, E. G. ....Petrolia	3 ¹ Cockburn, L. S. ....Toronto
1 Baird, J. A. ....Leamington	3 ¹ Code, A. G. ....Perth
1 Baird, W. J. ....Scarboro	3 ¹ Cole, C. R. ....Woodstock
1 Barnett, H. A. ....Toronto	1 Colquhoun, G. A. Vankleek Hill
1 Barry, M. J. ...Westmount, Que.	4 Craig, J. H. ....Toronto
1 Berry, E. W. ....Seaforth	3 ¹ Cumming, N. S. ...Hamilton
1 Bingham, H. C. ....Clifford	3 Dean, C. D. ....Toronto
2 Bissett, D. G. Strathcona, Alta.	5 De Laporte, A. V. ...Toronto
1 Blackwell, R. H. H. ...Peterboro'	3 Dobbin, R. L. ....Peterboro'
3 Blair, F. J. ....Espanola	3 ¹ Dobson, W. P. ....Fordwich
1 Bowman, E. P. West Montrose	3 Duncan, J. M. ....Toronto
2 Brock, A. F. ...Saint Williams	1 Eadie, L. ....Toronto
3 Browne, M. O. ....Toronto	2 Emery, V. H. ....Aldershot
3 Burgess, J. R. ....Havelock	3 ¹ Evans, W. J. ....Jermyn
1 Burnham, N. G. H. ...Toronto	3 ¹ Fairlie, H. W. ...Queenston
3 ¹ Cale, W. C. ....Toronto	3 Ferguson, C. R. ...Brampton
2 Campbell, A. D. ....Stayner	3 ¹ Ferguson, J. W. ....Brampton
3 Carlyle, W. M. ....Toronto	4 Fiskien, J. B. K. ....Toronto
3 Caudwell, N. S. ...Brantford	

- 1 Fletcher, A. W.Thornton
 1 Fletcher, J. A.Fletcher
 3¹ Fletcher, F. T.Calgary, Alta.
 3¹ Flint, T. R. C.Toronto
 3¹ Flynn, C. C.London
 3¹ Follett, R. C.Oakville
 2 Foreman, J. M.Lucan
 1 Foster, W. J.Windsor
 3 Foulds, W. C.Toronto
 1 Fraser, A.London, Eng.
 2 Fredin, J.London
 3 Gall, H.Toronto
 1 Gibson, M. M.Willowdale
 1 Gibson, J. M.Arthur
 1 Goad, V. A. E.Toronto
 1 Goodridge, H.Edmonton
 3¹ Goodeve, V. S.Toronto
 2 Gordon, W. A.Wallaceburg
 3 Gourlay, V. F.Galt
 3¹ Graham, E. B.Brampton
 3 Grant, A. D.Sarnia
 2 Greene, R. L.Toronto
 5 Harris, J. H.Toronto
 1 Harvie, N. J.Orillia
 3¹ Hastings, M. B.Midland
 1 Helliwell, J. G.Toronto
 1 Henderson, J. F.Toronto
 3¹ Hickling, F. G.Dawson, Y.T.
 3¹ Hill, A.Owen Sound
 3¹ Hinch, E. F.Toronto
 1 Hoover, O. H.Port Perry
 1 Hopkins, C. H.Lindsay
 2 Hopkins, P. E.Kinmount
 3¹ Irwin, W. J.Belfast
 2 James, F. L.Tillsonburg
 3¹ Jamieson, E. A.Vancouver, B. C.
 1 Jeffery, C. C.Midland
 1 Johnston, H. C.Toronto
 1 Johnston, R. H.Edmonton, Alta.
 3 Joy, D. G.Toronto
 1 Keith, J. C.Calgary, Alta.
 2 King, J. T.Cooksville
 3 Kingstone, G. A.Toronto
 2 Kirwan, G. L.Ottawa
 5 Kirwan, P. T.Ottawa
 1 Knight, S.Bruce Mines
 3¹ Lawler, E. R.Toronto
 3 Leaver, C. B.Toronto
 3¹ Lee, R. G.Toronto
 1 Leitch, J. N.Toronto
 3¹ Lethbridge, W. R.Boxall
 1 Longstaff, J. C.Toronto
 3¹ MacAndrew, W. M., Renfrew
 3 Macdonald, J. B.Victoria, B. C.
 2 Macdonald, A. D.Cobalt
 1 Macdonald, J. A.Ridgetown
 1 Macdonald, G. A.Muirkirk
 1 MacGregor, A. E.Niagara-on-the-Lake
 1 MacKay, E. G.Hamilton
 1 MacLennan, G. G.Edmonton, Alta.
 1 MacLeod, D. D.Parkhill
 3¹ MacMurchy, H. G.Toronto
 3¹ MacTavish, H. J.Toronto
 4 McBride, T. C.London
 1 McDougall, S. G.Ottawa
 1 McElhanney, T. A.Kincardine
 1 McGarry, P. J.Merritton
 3¹ McKim, L. R.Wyecombe
 1 McNiven, J.Putnam
 3 McSloy, J. I.St. Catharines
 2 Maisonville, A. W. R.Pilette's Corner
 1 Marr, N.London
 1 Martin, W. H.St. Thomas
 2 Matthews, A. C.Toronto
 1 Meader, C. H.Toronto
 3¹ Merriman, H. O.Hamilton
 1 Miller, D. J.Orillia
 1 Milligan, F. S.London
 3¹ Mills, P. E.Toronto
 3¹ Morgan, J. P.Newmarket
 1 Mortimer, F. R.Arva
 1 Munro, A. H.Peterboro'
 1 Murton, J. C.Fergus
 3¹ Nash, J. C.London
 1 Newhall, V. A.Toledo, O.
 2 Newton, W. E.Toronto
 1 Nichol, F. T.Beeton
 1 O'Neil, C. M.Erindale-on-Credit
 3¹ Palmer, C. E.Richmond Hill
 3 Parker, G. C.Toronto
 1 Paul, R. A.Listowel
 3¹ Pearce, K. K.Port Hope
 1 Pearson, A. W.Calgary, Alta.
 3 Phillips, C. H.Toronto
 1 Pick, B. W.Glen Meyer
 1 Pye, D. E.Cranbrook, B.C.
 1 Ramsay, W. S.St. Johns, Nfld.
 3¹ Redfern, B. J.Toronto
 3 Richardson, C. E.Toronto
 1 Ritchie, H. C.Calgary, Alta.
 1 Ross, O. W.Brantford
 1 Rubidge, W. F. B.Dixie
 1 Sharpe, D. N.Lindsay

3. Shaw, W. C. ....Toronto	2 Titus, C. G. ...Westport, N.S.
3 Sherman, N. C. ....Brighton	3 ¹ Van Allen, K. M. ....Toronto
1 Smith, W. C. ....Duluth, Minn.	1 Venney, L. T. ....Brockville
2 Smith, F. L. ....Burlington	1 Wagner, N. ....Toronto
5 Smith, G. E. ....Toronto	1 Walker, R. M. ....Toronto
3 Smith, M. L. New Westminster, B.C.	2 Walton, T. ....London
2 Spry, R. J. ....London	1 Warrington, G. A. ...Cornwall
2 Steele, A. L. ....Fergus	3 ¹ Watson, M. B. ....Emery
2 Steven, H. M. ....Toronto	3 ¹ Watts, E. M. ....Toronto
3 Stewart, J. D. ....Chesley	3 White, H. M. ....Chatham
1 Stone, L. I. ....Toronto	1 Whitside, J. L. ....Delhi
3 Sutherland, A. L. Edmonton, Alta.	4 Wickens, W. S. ....Toronto
3 Sylvester, K. B. ....Lindsay	3 Williams, G. K. ....Toronto
3 ¹ Teeter, W. M. ....Teeterville	1 Wilson, W. H. ....Merritton
3 ¹ Ternan, E. A. ....Arthur	3 ¹ Woodley, G. E. ....Waterford
5 Thom, W. H. ....Watford	1 Workman, G. R. ...Tillsonburg
3 Thompson, H. B. ...Wellington	3 Wright, L. A. ....Toronto
3 ¹ Thompson, R. M. A. Strathroy	3 Youell, A. W. ...Aylmer West
	1 Young, W. S. ....Guelph

Fourth Year.

1 Anderson, R. M. ...Burlington	1 Flanagan, O. L. ...Gore Bay
3 Barry, W. H. ...Niagara Falls	1 Flint, C. ....Toronto
1 Bartlett, E. ....Smithville	3 ¹ Freeman, T. E. ....Freeman
3 ¹ Beckstedt, R. D. S. Lacolle, Que.	3 ¹ Frost, E. R. ....Tweed
1 Bennett, G. A. ....Eden	1 Graham, D. A. ....Ivan
3 Birchard, E. R. ...Linden Valley	1 Grassie, C. A. ....Welland
3 Black, G. E. ....Stratford	1 Greene, G. E. D. ....Toronto
3 Black, W. D. ....Toronto	1 Gunn, W. W. ....Toronto
3 ¹ Blackwood, W. C. ....Harriston	1 Harvey, D. W. ....London
3 ¹ Bowen, G. H. ....Toronto	3 ¹ Holmes, A. E. ...Owen Sound
3 ¹ Brown, C. E. ....Meaford	1 Hoshal, G. C. ...Niagara Falls
2 Brown T. W. ....Alberton	3 Hughes, C. ....Toronto
1 Browne, E. W. ....London	1 Hunter, A. E. ....Warton
3 Burns, J. E. ....Toronto	3 ¹ Irwin, H. ....Hillsburgh
1 Cameron, M. G. ...Peterboro'	3 ¹ Isbister, J. ....Wingham
2 Campbell, J. E. ...Coldstream	3 ¹ Jackes, F. P. ....Thornhill
1 Collinson, J. G. ...St. Thomas	1 James, E. W. D. Portage La Prairie, Man.
1 Coltham, G. W. ....Aurora	1 Johnson, C. C. ....Toronto
3 ¹ Cooch, H. A. ....Toronto	1 Johnston, C. E. ....Toronto
2 Cumming, J. D. ....Toronto	1 Johnston, J. T. ...Kincardine
3 ¹ Cunningham, R. H. ...London	3 ¹ Kemp, J. B. O. ....Toronto
1 Dallyn, F. A. ....Toronto	3 Key, W. R. ....Toronto
2 Davis, A. I. ....Toronto	5 Klotz, H. N. ....Toronto
3 Delahaye, W. H. ....Ottawa	2 Laing, P. A. ....Dundas
3 ¹ Derham, W. P. ....Ottawa	3 ¹ Lamont, A. W. ....Roome
5 Dodds, W. A. ....Bolton	3 Langmuir, C. B. ....Toronto
1 Evans, S. L. ....Corinth	3 ¹ Lennox, A. E. ....Orillia
1 Falconer, F. S. ....Sheilburne	3 ¹ Macfarlane, E. D. Victoria, B.C.
3 ¹ Fargey, T. A. ....Belleville	3 Maclean, B. A. ....Orillia
1 Ferguson, J. B. ....Kenora	1 Macpherson, N. W. ...St. Thomas
3 Ferguson, A. T. ....Toronto	

1 McArthur, A. S.	Toronto	3' Stroud, S.	Hamilton
3' McCollum, C. R.	Welland	2 Stuart, J. L. G.	Toronto
3' McCuaig, P. J. ...	Gamebridge	1 Swan, R. G.	Kincardine
1 McMillan, V.	Port Hope	1 Tate, H. W.	Wimbledon, Eng.
3 Manning, N. H.	Oshawa	1 Taylor, W. E. ...	Owen Sound
1 Manson, A. B.	Fairview	3' Taylor, J. W. R.	Keene
2 Morris, C. A.	Toronto	3' Thompson, E. A. ...	Teeswater
3' Morton, G.	Carluke	1 Tipper, G. A.	Brantford
1 Munro, F. V.	Chatham	1 Toms, C. G.	Toronto
2 Murphy, C. J.	St. Catharines	3 Trees, A. G.	Toronto
1 Newton, J.	Sarnia	3' Turnbull, W. G.	Toronto
3' O'Hearn, J. J.	Toronto	1 Vatcher, A.	Freshwater, Nfld.
1 Petry, A. M.	Toronto	1 Walker, J. A.	Guelph
3' Porter, C. J.	Marburg	1 Webb, C. E.	Toronto
1 Redfern, C. R.	Toronto	1 West, A. M.	Vancouver, B.C.
1 Richardson, F. L.	Maple	1 Wilkinson, R. G. ...	Aberarder
3 Ricker, H. A.	Dunnville	5 Williams, J. A. M.	Edmonton, Alta.
3' Rutledge, L. T.	Glen Williams	1 Williamson, O. T. G. ...	Guelph
1 Sanderson, A. U.	Toronto	3 Wilson, F. F.	Edmonton, Alta.
3' Schwenger, C. E. ...	Hamilton		
1 Stayner, D. S.	Toronto		

Occasional Students.

Teasdale, C. M.	Concord.
Thomson, R. W.	Toronto
Train, C. W.	Haileybury

Arts Students taking instruction in Chemistry, Assaying, etc.

Northcote, R. S.	Toronto
Tanton, T. L.	London

Summary.

First Year Students	228
Second Year Students	209
Third Year Students	186
Fourth Year Students	102
Occasional Students	2
Arts Students	2

PRIZEMEN.

Engineering.

1879.	I.	Year	J. McAree	1st Prize.
1880.	II.	"	J. L. Morris	1st "
1881.	I.	"	G. H. Duggan	1st "
	II.	"	D. Jeffrey	1st "
1882.	I.	"	A. R. Raymer	1st "
	I.	"	E. W. Stern	2nd "
	II.	"	G. H. Duggan	1st "
	III.	"	D. Jeffrey	1st "
1883.	I.	"	B. A. Ludgate	1st "
	I.	"	A. M. Bowman	2nd "
	II.	"	A. R. Raymer	1st "
	II.	"	E. W. Stern	2nd "
	III.	"	G. H. Duggan	1st "
1884.	II.	"	B. A. Ludgate	1st "
	III.	"	E. W. Stern	1st "
	III.	"	A. R. Raymer	2nd "
1885.	I.	"	A. E. Lott	1st "
	I.	"	J. Rogers	2nd "
	II.	"	T. K. Thomson	1st "
	III.	"	B. A. Ludgate	1st "
1886.	I.	"	C. H. C. Wright	1st "
	I.	"	J. E. Ross	2nd "
	II.	"	A. E. Lott	1st "
1887.	I.	"	H. E. T. Haultain	1st "
	II.	"	C. H. C. Wright	1st "
	III.	"	A. E. Lott	1st "
	III.	"	J. Rogers	2nd "
1888.	I.	"	E. B. Merrill	1st "
	I.	"	F. M. Bowman	2nd "
	II.	"	D. D. James	1st "
	III.	"	C. H. C. Wright	1st "
1889.	I.	"	J. K. Robinson	1st "
	I.	"	G. E. Silvester	2nd "
	II.	"	E. B. Merrill	1st "
	II.	"	F. M. Bowman	2nd "
	III.	"	D. D. James	1st "
1890.	I.	"	C. Fairchild	1st "
	II.	"	E. B. Merrill	2nd "
	III.	"	J. K. Robinson	1st "
	III.	"	F. M. Bowman	1st "

1891.	I.	"	.....	A. J. McPherson	.....1st	"
	I.	"	.....	R. B. Watson	.....2nd	"
	II.	"	.....	J. B. Goodwin	.....1st	"
	III.	"	.....	G. E. Sylvester	.....1st	"
	III.	"	.....	C. W. Dill	.....2nd	"
1892.	I.	"	.....	A. E. Bergey	.....1st	"
	I.	"	.....	R. W. Angus	.....2nd	"
	II.	"	.....	A. J. McPherson	.....1st	"
	II.	"	.....	R. B. Watson	.....2nd	"
	III.	"	.....	E. J. Laschinger	.....1st	"
	III.	"	.....	C. Fairchild	.....2nd	"

The Grant of prizes was withdrawn at the close of 1892.

Architecture.

The prize in Architecture was the gift of Mr. D. B. Dick, Architect, Toronto.

1891.	I.	Year.....	H. F. Ballantyne.
1892.	I.	Year.....	J. A. Ewart.
1893.	I.	Year.....	A. H. Harkness.
1894.	I.	Year.....	E. A. Forward.
1895.	I.	Year.....	W. F. Scott.
1896.	I.	Year.....	D. Macintosh.
1899.	I.	Year.....	W. F. Shepherd.

Civil Engineering.

Prizes are awarded for general proficiency in the subjects of the Third Year.

Date.	Name	Donor.
1897.	M. B. Weekes.....	T. Kennard Thomson, C.E.
1898.	J. A. Stewart.....	"
1899.	T. Shanks.....	"
1900.	E. H. Phillips.....	"
1901.	H. P. Rust.....	"
1902.	W. F. Ratz.....	"
1903.	C. R. Young.....	"
1904.	W. N. Moorhouse.....	"
1905.	W. Barber.....	"
1905.	N. L. Crosby.....	Noel Marshall, Esq.
1906.	W. P. Near, B.A.....	T. Kennard Thomson, C.E.
1906.	W. A. M. Cook.....	Noel Marshall, Esq.
1907.	M. K. McQuarrie.....	T. Kennard Thomson, C.E.
1907.	T. H. Hogg.....	Noel Marshall, Esq.
1908.	M. Pequegnat.....	T. Kennard Thomson, C.E.
1909.	E. S. Martindale.....	" " " "

Mining Engineering.

1905. G. S. Scott.....	Hon. W. H. Montague, M.D.
1905. W. A. Begg.....	“
1906. J. A. McKenzie.....	“
1906. W. Huber.....	“
1907. B. Neilly.....	“

Mechanical Engineering.

1905. W. G. Nicklin.....	Standard Silver Co.
1906. D. W. Marrs.....	“ “ “
1907. H. O. Hill.....	“ “ “

Electrical Engineering.

1905. C. E. Sisson.....	Noel Marshall, Esq.
1906. A. H. Hull.....	“ “ “
1907. F. R. Ewart.....	“ “ “

Mechanical and Electrical Engineering.

1897. A. T. Gray.....	F. A. Riehle, Esq.
1898. F. C. Smallpiece.....	“
1905. C. B. Aylesworth.....	Standard Silver Co.
1906. E. M. Wood.....	“ “ “
1907. H. Raine	“ “ “

Architecture.

1906. A. W. McConnell.....	Hon. W. H. Montague, M.D.
1907. G. N. Molesworth.....	“

Analytical and Applied Chemistry.

1906. C. C. Forward.....	Standard Silver Co.
1907. P. F. Morley.....	“ “ “

Degree of Bachelor of Applied Science.

Date of admission.	Name	Date of admission.	Name
1909	Akers, H. G.	1904.*	Angus, H. H.
1908*	Allen, F. G.	1901.	Ardagh, E. G. R.
1893.	Alison, T. H.	1907.	Armer, J. C.
1909.*	Amos, W. L.	1896.	Armstrong, J.
1908.	Anderson, F. J.	1897.*	Bain, J. W.
1897.*	Angus, R. W.	1907.	Baker, M. H.

*Degree with honours.

Degree of Bachelor of Applied Science—*Continued.*

Date of admission.	Name.	Date of admission.	Name.
1894.*	Ballantyne, H. F.	1909.	Chesnut, F. H.
1907.*	Banting, E. W.	1894.*	Chewett, H. J.
1906.*	Barber, W.	1903.*	Christie, W.
1901.	Barley, J. H.	1905.	Christie, U. W.
1907.	Bates, M.	1906.	Coates, P. C.
1907.*	Betts, H. H.	1905.*	Code, T. F.
1902.	Barrett, R. H.	1900.*	Chubbuck, L. B.
1895.	Beauregard, A. T.	1902.	Cockburn, J. R.
1906.	Begg, W. A.	1909.	Collett, W. C.
1908.*	Beynon, D. E.	1907.*	Cook, W. A. M.
1903.	Blair, W. J.	1909.	Cory, R. Y.
1902.*	Boswell, M. C.	1900.	Coulthard, R. W.
1908.	Bowman, H. D.	1907.	Cousins, E. L.
1899.	Boyd, W. H.	1909.	Cowper, G. C.
1909.	Brady, W. S.	1909.*	Coyne, H.
1902.	Brandon, E. T.	1901.	Craig, J. A.
1907.	Brandon, H. E.	1905.	Crerar, S. R.
1909.	Brechen, P. R.	1906.*	Crosby, N. L.
1903.	Brereton, W. P.	1909.	Culbert, J. V.
1907.	Brian, M. E.	1903.*	Culbert, M. T.
1896.	Brodie, W. M.	1909.*	Dahl, A. D.
1909.	Brown, J. A.	1907.	Daniels, W. N.
1906.	Brown, T. D.	1909.	Davis, R. S.
1909.	Buchan, P. H.	1901.	Davison, J. E.
1895.	Bucke, W. A.	1905.	Davison, A. E.
1909.	Bush, C. E.	1907.*	Death, N. P. F.
1907.	Bunnell, A. E. K.	1902.	DeCew, J. A.
1906.	Burnham, F. W.	1901.	Dickson, G. W.
1900.	Burnside, J. T. M.	1901.*	Dixon, H. A.
1905.	Burwash, N. A.	1896.	Dobie, J. S.
1909.	Campbell, A. W.	1907.	Dundass, C. S.
1905.	Campbell, A. J.	1909.*	Dyer, F. C.
1905.	Campbell, A. M.	1902.*	Eason, D. E.
1898.	Carpenter, H. S.	1909.	Edwards, C.
1909.	Carscallen, H. R.	1904.	Edwards, W. M.
1899.	Carter, W. E. H.	1897.*	Elliott, H. P.
1903.*	Chace, W. G.	1903.	Empey, J. M.
1903.*	Chadsey, S. B.	1908.	Evans, S. D.
1898.	Charlton, H. W.	1895.*	Ewart, J. A.

*Degree with honours.

Degree of Bachelor of Applied Science—*Continued.*

Date of admission.	Name.	Date of admission.	Name.
1908.*Ewart, F. R.		1908.*Harkness, A. L.	
1904. Fensom, C. J.		1906. Harris, C. J.	
1906. Ferguson, G. H.		1908. Harrison, E.	
1906.*Fierheller, H. S.		1907. Hartney, J. C.	
1905.*Ford, A. L.		1902. Harvey, C.	
1901. Foreman, W. E.		1901. Hemphill, W.	
1909. Foster, A. H.		1909. Hendry, M. C.	
1908. Fux, P. C.		1895. Herald, W. H.	
1904.*Gaby, F. A.		1906.*Heron, J. B.	
1903.*Gagné, S.		1907. Hett, S.	
1908.*Galt, G.		1906. Hewson, W. G.	
1904. Gardner, J. C.		1908.*Hill, H. O.	
1908.*Garrow, A. B.		1908.*Hogg, T. H.	
1903.*Gibson, A. E.		1901. Holcroft, H. S.	
1904.*Gibson, N. R.		1908. Hookway, C. W.	
1904. Gibson, W. S.		1907. Hopkins, C. H.	
1904.*Gillespie, P.		1909.*Huether, D. J.	
1909. Gillies, A.		1909. Huether, A. D.	
1894. Goodwin, J. B.		1908.*Hull, A. H.	
1908.*Graham, C. W.		1896. Hull, H. S.	
1899. Grant, W. F.		1909. Hunter, A. N.	
1908. Grasett, C. S.		1908.*Hutton, C. H.	
1898. Gray, A. T.		1908. Hyland, H. M.	
1905. Gray, W. W.		1908. Hyman, E. W.	
1909. Greene, P. W.		1908.*Ireland, L. G.	
1905. Greenwood, W. K.		1909. Jackson, W.	
1907. Guest, W. S.		1894. James, D. D.	
1909.*Gulley, C. L.		1905. James, E. A.	
1901. Guy, E.		1893. James, O. S.	
1909. Hackner, J. W.		1905. Jermyn, P. V.	
1908.*Hagarty, R. E. W.		1905.*Job, H. E.	
1897.*Haight, H. V.		1895. Johnson, S. M.	
1909. Hall, K.		1902. Johnson, J. A.	
1904. Hamilton, J. F.		1896. Johnson, A. C.	
1907. Hamilton, C. B.		1907. Johnston, C.	
1909. Hamilton, C. T.		1907. Jones, G. R.	
1905. Hanes, G. S.		1907. Jones, T.	
1900. Hare, W. A.		1907. Jupp, A. E.	
1897.*Harkness, A. H.		1908. Kay, E. W.	

*Degree with honours.

Degree of Bachelor of Applied Science—*Continued.*

Date of admission.	Name.	Date of admission.	Name.
1894.*	Keele, J.	1909.	McLean, L. A.
1909.	Keppy, J. D.	1903.	McMaster, A. T. C.
1908.	Kinghorn, A. A.	1901.	McMillan, J. G.
1903.	Knight, R. H.	1909.	McMordie, H. C.
1899.	Kormann, J. S.	1908.	McNeill, F. W.
1894.	Laidlaw, J. T.	1894.*	McPherson, A. J.
1893.	Laing, A. T.	1909.*	McRoberts, A. A.
1909.	Lamb, F. C.	1895.	McTaggart, A. L.
1906.	Lancaster, H. M.	1902.*	McVean, H. G.
1907.	Lang, J. L.	1897.	Macallum, A. F.
1903.	Langmuir, F. L.	1897.	Macbeth, C. W.
1893.*	Laschinger, E. J.	1904.	Macintosh, D.
1901.	Latham, R.	1907.*	MacIachlan, W.
1906.	Latornell, A.	1908.	Malcolmson, W. S.
1906.	Latornell, A. J.	1905.	Marriott, F. G.
1893.*	Lawson, W.	1909.	Marshall, R. J.
1893.	Lea, W. A.	1897.	Martin, T.
1908.	LePan, A. D.	1908.	Mason, D. H. C.
1909.*	Leslie, J. N. M.	1903.*	Matheson, P.
1908.	Linton, A. P.	1908.	Melson, J. W.
1906.*	Loudon, T. R.	1907.*	Menzies, J. M.
1907.	MacKenzie, K. A.	1894.*	Merrill, E. B.
1894.	McAllister, A. L.	1908.	Miller, L. R.
1895.	McAllister, J. E.	1908.	Mills, G. G.
1893.	McAree, J.	1893.	Milne, C. G.
1905.	McAuslan, H. J.	1896.	Mines, W. H.
1904.	McBride, A. H.	1909.	Minns, J. B.
1907.*	McConnell, A. W.	1895.*	Minty, W.
1905.	McCuaig, O. B.	1894.	Mitchell, C. H.
1893.	McEntee, B.	1907.	Mitchell, B. F.
1905.	McEwen, G. G.	1906.	Moffatt, R. W.
1904.	McFarlane, J. A.	1900.	Monds, W.
1906.	McFarlane, W. G.	1909.	Monk, E. D.
1908.*	McFarlane, J. B.	1905.*	Montgomery, R. H.
1905.*	McGibbon, C. P.	1909.*	Moody, F. H.
1896.*	McGowan, J.	1908.	Moore, J. M.
1908.*	McGugan, D. J.	1909.	Morice, J. H.
1905.	McKay, C. D.	1909.	Mowbray, F. E. H.
1896.*	McKinnon, H. L.	1906.	Munro, G. R.

*Degree with honours.

Degree of Bachelor of Applied Science—*Continued.*

Date of Admission.	Name.
1909.*	Murray, W. P.
1909.	Murray, E. W.
1907.*	Near, W. P.
1901.	Neelands, E. V.
1908.	Neelands, E. W.
1908.	Neilly, B.
1904.	Nevitt, I. H.
1907.	Nicklin, W. G.
1908.	Nourse, A. E.
1904.	Oliver, E. W.
1904.	Pace, J. D.
1905.	Pace, G.
1906.*	Pardoe, W. S.
1907.	Park, D. G.
1905.	Parke, J.
1904.	Patten, B. B.
1909.*	Pequegnat, M.
1909.	Peckover, H. J.
1906.	Phillips, E. P. A.
1904.	Plunkett, T. H.
1901.	Pope, A. S. H.
1907.	Porte, W. B.
1903.*	Powell, G. G.
1902.*	Price, H. W.
1909.	Prochnow, F. E.
1909.	Proctor, E. M.
1909.	Publow, C. F.
1907.	Purser, R. C.
1908.	Quance, G. E.
1906.	Ramsey, G. L.
1909.*	Rannie, J. L.
1909.*	Ransom, J. T.
1905.	Raymond, D. C.
1909.*	Redfern, W. B.
1906.	Reid, F. B.
1900.*	Revell, G. E.
1900.	Richards, E.
1908.	Richardson, C. W. B.
1906.*	Riddell, M. R.

Date of Admission.	Name.
1901.	Roaf, J. R.
1903.	Robertson, H. D.
1907.	Robertson, N. R.
1909.	Robertson, A. R.
1898.*	Robinson, A. H. A.
1903.	Roddick, J. O.
1907.	Rogers, C. H.
1907.	Rolfson, O.
1909.*	Rose, R. R.
1907.	Ross, R. C.
1907.*	Rothwell, T. E.
1905.	Roxborough, G. S.
1905.	Rutherford, F. N.
1902.	Rust, H. P.
1902.	Sauer, M. V.
1901.	Saunders, H. W.
1905.*	Scheibe, H. M.
1908.*	Scott, W. A.
1900.*	Shanks, T.
1909.	Shaw, W. E. V.
1909.	Shearer, H. F.
1905.	Sheply, J. D.
1895.	Shields, J. D.
1899.	Shipley, A. E.
1906.	Shirriff, C. H.
1903.	Sinclair, D.
1906.	Slater, F. W.
1902.*	Smallpiece, F. C.
1898.	Smiley, R. W.
1908.*	Smith, D. A.
1904.	Smith, H. G.
1905.	Smither, W. J.
1908.	Smithrim, E. R.
1894.*	Speller, F. N.
1908.*	Spencer, A. C.
1894.	Squire, R. H.
1909.	Stamford, W. L.
1909.	Starr, R. H.
1902.	Stevenson, W. H.

*Degree with honours.

Degree of Bachelor of Applied Science---Continued.

Date of Admission.	Name.	Date of Admission.	Name.
1908.	Stewart, L. D. N.	1905.	Trimble, A. V.
1909.*	Stewart, R. B.	1905.	Tucker, B. B.
1909.*	Stewart, W. M.	1906.*	Turner, W. E.
1908.*	Stiles, J. A.	1900.	Wagner, W. E.
1909.*	Stiver, J. L.	1906.	Wagner, H. L.
1909.	Stuart, H. B.	1905.*	Walker, E. W.
1898.*	Stull, W. W.	1906.	Watson, J. P.
1909.	Summers, G. F.	1909.	Wedlake, R. M.
1903.	Sutherland, W. H.	1898.	Weekes, M. B.
1906.	Swan, W. G.	1901.	Weir, H. M.
1903.	Teasdale, C. M.	1906.*	Wells, A. F.
1900.*	Tennant, D. C.	1909.	White, W. J.
1901.	Tennant, W. C.	1908.*	Wilkes, E. D.
1909.	Thomas, V. C.	1905.*	Williams, C. G.
1908.	Thompson, P. M.	1899.*	Williamson, D. A.
1893.	Thomson, R. W.	1904.*	Wilson, N. D.
1905.	Thomson, S. E.	1908.*	Wilson, J. N.
1906.	Thomson, L. R.	1908.	Wilson, A. F.
1907.	Thomson, J. E.	1909.*	Wilson, F. D.
1908.	Thomson, O. R.	1908.*	Wood, E. M.
1901.	Thorne, S. M.	1905.	Worthington, W. R.
1909.	Thornley, J. H.	1893.*	Wright, C. H. C.
1901.	Thorold, F. W.	1902.	Wright, R. T.
1908.	Tillson, E. D.	1905.	Wright, W. F.
1905.	Townsend, C. J.	1905.*	Young, C. R.
1905.*	Townsend, D. T.	1907.	Young, W. H.
1906.	Traill, J. J.	1903.	Zahn, H.
1904.	Trees, S. L.	1909.*	Zimmer, A. R.
1896.	Tremaine, R. C. C.		

Degree of Civil Engineer (C.E.).

1898.	Alison, T. H.	1908.	Macallum, A. F.
1898.	Ashbridge, W. T.	1885.	Morris, J. L.
1895.	Bowman, A. M.	1896.	Moore, J. E. A.
1893.	Bowman, F. M.	1898.	Mitchell, C. H.
1892.	Chewett, H. J.	1901.	McDowall, R.
1900.	Connor, A. W.	1895.	McAllister, J. E.
1901.	Francis, W. J.	1909.	Oliver, E. W.
1900.	Haultain, H. E. T.	1889.	Tyrrell, J. W.
1893.	Innes, W. L.	1894.	Tyrrell, H. G.
1886.	Kennedy, J. H.	1892.	Thomson, T. K.

*Degree with honours.

Degree of Mining Engineer (M.E.).

- | | |
|----------------------|----------------------|
| 1897. Bucke, M. A. | 1909. Thomson, R. W. |
| 1900. Laidlaw, J. T. | |

Degree of Mechanical Engineer (M.E.).

- | | |
|-----------------------|-------------------------|
| 1908. Fensom, C. J. | 1905. Laschinger, E. J. |
| 1901. Johnston, A. C. | 1900. White, A. V. |

Degree of Electrical Engineer (E.E.).

- | | |
|-----------------------|----------------------|
| 1896. Ross, R. A. | 1902. Elliott, H. P. |
| 1903. Chubbuck, L. B. | 1905. Hemphill, W. |

GRADUATES.

Graduates are requested to inform the Secretary of changes in their addresses.

1881.

Course.	Name and address.	Occupation.
1. J. L. Morris, C.E., O.L.S. ...	Morris and Moore, Pembroke, Ont.	Land Surveyors and Architects.

1882.

- | | |
|---|-----------------------------------|
| 1. D. Jeffrey | Contractor.
Windsor, Missouri. |
| 1. J. H. Kennedy, C.E., O.L.S., Asst. Chief Engineer, Vancouver,
Vancouver, B.C. | Victoria & Eastern Railway. |
| 1. J. McAree, B.A.Sc., D.T.S. (Deceased.) | |

1883.

- | | |
|------------------------------------|---|
| 1. D. Burns, O.L.S. | Instructor in Mathematics and Plan
A.M., Can. Soc. C.E., Drawing, Carnegie Technical
Pittsburgh, Pa. Schools. |
| 1. G. H. Duggan | Dominion Coal Co., Ltd.
M. Can. Soc. C.E.,
Glace Bay, N.S. |
| 1. J. W. Tyrrell, C.E., D.L.S. ... | Tyrrell & MacKay, Consulting En-
gineers and Surveyors.
Hamilton, Ont. |

1884.

- | | |
|-----------------------------------|---|
| 1. W. C. Kirkland | Principal Asst. Engineer, Drainage,
New Orleans, La. Sewage and Water Board of
New Orleans. |
| 1. J. McDougall, B.A. (Deceased.) | |
| 1. A. R. Raymer | Asst. Chief Engineer, P. & L. E. Ry.
Pittsburgh, Pa. |
| 1. James Robertson, O.L.S. ... | Commissioner,
Toronto, Ont. The Canada Co. |
| 1. E. W. Stern | Consulting Engineer.
M. Am. Soc. C.E.,
103 Park Ave.
New York. |

1885.

Course.	Name and address.	Occupation.
1. J. F. Bleakley	Civil Engineer. Bowmanville, Ont.	
1. H. J. Bowman, D. & O.L.S...	Bowman & Connor. M. Can. Soc. C.E. Berlin, Ont.	
1. E. E. Henderson, O.L.S.....	Civil Engineer. Henderson, P.O., Me.	
1. B. A. Ludgate, O.L.S.	Asst. Engineer, P. & L. E. Ry. Pittsburgh, Pa.	
1. O. McKay, O.L.S.	Civil Engineer and Surveyor. Walkerville, Ont.	

1886.

1. A. M. Bowman, D.L.S.	Pennsylvania Contracting Co. Pittsburgh, Pa.	
1. E. B. Hermon, D. & O.L.S...	Asst. Engineer Vancouver Power Vancouver, B.C.	Co.
1. Robert Laird, O.L.S.	Laird & Routly, Engineers and Haileybury, Ont.	Surveyors.
1. T. Kennard Thomson, C.E...	Consulting Engineer. M. Can. Soc. C.E., M. Am. Soc. C.E., Hudson Terminal Bldg. New York.	
1. H. G. Tyrrell, C.E.	Chief Engineer, A.M. Can. Soc. C.E., 2151 Fulton Ave., Cincinnati, O.	The Brackett Bridge Co.

1887.

1. J. C. Burns (deceased).		
1. A. E. Lott	Consulting Railway Engineer, Los Angeles, Cal.	441 Bradbury Building.
1. A. L. McCullough, O.L.S. ...	Engineer and Surveyor. A.M. Can. Soc. C.E., Nelson, B.C.	
1. F. Martin, M.B., O.L.S.....	Physician.	
1. C. H. Pinhey, D. & O.L.S....	110 Wellington St. Ottawa, Ont.	
1. J. Rogers, O.L.S.	Town Engineer. Mitchell, Ont.	

1888.

Course.	Name and address.	Occupation.
1. J. F. Apsey, O.L.S.....	Asst. Div. Engineer, Baltimore 3205 Wallbrook Ave., Baltimore, Md.	Sewerage Commission.
1. W. T. Ashbridge, C.E.,	Engineer and Surveyor. 1444 Queen St. E., Toronto, Ont.	
1. Edward F. Ball	Chief Asst. Engineer, Land and A.M. Can. Soc. C.E., 335 Madison Ave., New York, N.Y.	Tax Depart., N.Y. Central & Hudson River Railroad.
1. D. B. Brown, O.L.S.	Locating Engineer, Quebec, P.Q.	Transcontinental Ry. (G.T.P.)
1. C. M. Canniff	Engineer, Expanded Metal and Toronto, Ont.	Fire-Proofing Co., Ltd.
1. H. J. Chewett, B.A.Sc., C.E.	Mechanical Engineer, Evans Rotary A.M. Can. Soc. C.E., Manning Arcade, Toronto, Ont.	Engine Co., Ltd.
1. J. Gibbons, D. & O.L.S.....	Surveying Staff, Dept of Interior. Ottawa, Ont.	
1. R. McDowall, O.L.S., C.E....	Town Engineer. A.M. Can. Soc. C.E., Owen Sound, Ont.	
1. G. W. McFarlen, O.L.S.	City Engineer's Staff. Toronto, Ont.	
1. C. J. Marani	Designing and Consulting Struc- Anacortes, Wash.	tural Engineer for the Russia Cement Co.
1. G. R. Mickle, B.A.	Mine Assessor, Toronto, Ont.	Province of Ontario.
1. J. H. Moore, O.L.S.	Town Engineer. Smith's Falls, Ont.	
1. G. H. Richardson	Contractors' Engineer, Hervey Junct., Que.	Transcontinental Ry.
1. K. Rose	Manager, Evans Rotary Engine Co. Curry Bldg., Toronto.	of Canada.
1. J. E. Ross, D. & O.L.S.	Surveying Staff, Dept. of Interior. Kamloops, B.C.	
1. C. H. C. Wright, B.A.Sc.....	Professor of Architecture, Toronto, Ont.	University of Toronto.

1889.

Course.	Name and address.	Occupation.
1. B. Carey	Toronto, Ont.	
1. W. J. Chalmers	Junior Engineer, Office U.S. Pittsburgh, Pa.	Engineer.
1. W. A. Clement	City Engineer. M. Can. Soc. C.E., Vancouver, B.C.	
1. G. F. Hanning	Toronto, Ont.	
1. H. E. T. Haultain, C.E.	Associate Professor of Mining En- M. Can. Soc. C.E., Toronto, Ont.	gineering, University of Toron- to.
1. J. Irvine	Locating Engineer, C.N.R. Vancouver, B.C.	
1. D. D. James, B.A., B.A.Sc.	Surveyor. 227 George St., To- ronto.	
1. F. X. Mill (deceased).		
1. H. K. Moberley, D. & S.L.S.	District Engineer and Surveyor. Moosomin, Sask.	
1. T. R. Rosebrugh, M.A.	Professor of Electrical Engineering, Toronto, Ont.	University of Toronto.
1. T. Wickett, M.D.	Physician. 362 Cannon St. E., Hamilton, Ont.	

1890.

5. W. E. Boustead (deceased).		
1. F. M. Bowman, O.L.S., C.E.	Structural Engineer, Pittsburgh, Pa.	Ritter-Conley Mfg. Co.
1. M.A. Bucke, M.E. (deceased).		
1. G. D. Corrigan (deceased).		
1. J. A. Duff, B.A. (deceased).		
1. A. B. English (deceased).		
1. N. L. Garland (deceased).		
1. J. Hutcheon, O.L.S.	Engineer and Surveyor. Guelph, Ont.	
1. W. L. Innes, O.L.S., C.E....	Manager, Canadian Cannery, Ltd. Simcoe, Ont.	
1. E. B. Merrill, B.A., B.A.Sc..	Consulting Engineer, M. Can. Soc. C.E. M. Am. Inst. E.E.	Toronto General Trusts Build- ing. Toronto, Ont.

1890—*Continued.*

Course.	Name and address.	Occupation.
1. J. R. Pedder (deceased).		
3. R. A. Ross, E.E.	Ross & Holgate, Consulting Elec- 80 St. Francois Xavier trical and Mechanical En- St., Montreal, Que. gineers.	
1. T. H. Wiggins, O.L.S.	Civil Engineer, and Dom. Land Saskatoon, Sask. Surveyor.	
1. W. J. Withrow	Patent Examiner, Patent Office. Ottawa, Ont.	

1891.

1. H. J. Beatty, O.L.S.	Engineer and Surveyor. Eganville, Ont.	
1. T. R. Deacon, O.L.S.	President and General Manager, M. Can. Soc. C.E. Manitoba Bridge & Iron Works, Winnipeg, Man. Ltd.	
1. C. W. Dill	C. W. Dill & Co., Civil Engineers M. Can. Soc. C.E., and Contractors, 318 Continent- Toronto, Ont. al Life Building.	
5. O. S. James, B.A.Sc.....	Chemist for J. E. Wilkinson Co., Toronto, Ont. Gold and Silver Refiners, 79 Lombard Street.	
1. A. Lane (deceased).		
1. J. E. McAllister, B.A.Sc.,	Manager, British Columbia Copper C.E., Greenwood, B.C. Co., Ltd.	
3. E. B. Merrill, B.A., B.A.Sc..	Consulting Engineers, Toronto Toronto, Ont. General Trusts Co.	
1. J. E. A. Moore, C.E.	Consulting and Contracting 10074 Kee Mar Court, Engineer. Cleveland, O.	
1. W. Newman, O.L.S.	Consulting Engineer. A.M. Can. Soc. C.E., Windsor, Ont.	
1. J. K. Robinson (deceased).		
1. W. B. Russel	Civil Engineer and Contractor. 318 Continental Life Bldg., Toronto, Ont.	
1. G. E. Silvester, O.L.S.....	Chief Engineer, Canadian Copper M. Am. Inst. M.E., Co. Copper Cliff, Ont.	
1. H. D. Symmes	Engineer and Contractor. Niagara Falls S., Ont.	

1892.

Course.	Name and address.	Occupation.
1. J. R. Allan, O.L.S.	Ranchman. Macleod, Alta.	
1. T. H. Alison, B.A.Sc., C.E....	Bergen Point Iron Works. West 5th St. Bayonne, N.J.	
1. A. G. Anderson	Hardware Merchant. Port Dover, Ont.	
1. C. Fairchild, D. & O.L.S...	Surveying Staff, Dept. of Interior. Brantford, Ont.	
1. J. B. Goodwin, B.A.Sc.....	Supt. of Construction, Empire Gasport, N.Y.	Eng. Corporation of New York.
4. C. E. Langley	Langley & Howland, Architects. Continental Life Bldg., Toronto, Ont.	
1. A. T. Laing, B.A.Sc.....	Secretary, Faculty of Applied Toronto, Ont.	Science, University of Toronto.
1. E. J. Laschinger, B.A.Sc.,	Mechanical Engineer, Estimating M.E., Johannesburg, Transvaal, S.A.	Branch, Consolidated Gold Fields.
5. W. L. Lawson, B.A.Sc.	Manager, Stirling Brush & Fort Stirling, Col.	Morgan Co.
3. W. A. Lee, B.A.Sc. (deceased)		
1. B. McEntee, B.A.Sc.	28 Queen St. E., To- ronto.	
3. C. G. Milne, B.A.Sc.(deceased)		
1. Chas. H. Mitchell, B.A.Sc....	Consulting Hydro-Electric Engin- C.E., M. Can. Soc. C.E., M. Am. Soc. C.E.	eer, Traders' Bank Bldg., To- ronto.
1. N. L. Playfair	Supt. Playfair Lumber Co. Midland, Ont.	
1. J. M. Prentice (deceased).		
1. J. A. Ross	Designer L. S. & M. S. Railway, Cleveland, O.	Engineering Office.
1. Albert N. Smith	Engineer, Wm. B. Pollock Co. Youngstown, O.	
1. R. W. Thomson, B.A.Sc.,	Mining Engineer. M.E., Stewart, B.C.	
3. A. V. White, M.E.	Mechanical Engineer. Toronto, Ont.	

1893.

Course.	Name and address.	Occupation.
1. A. G. Ardagh	Land Surveyor and Civil Barrie, Ont.	Engineer.
4.*H. F. Ballantyne, B.A.Sc.....	Architect. 244 Fifth Ave., New York, N.Y.	
1. G. L. Brown, O.L.S.	Civil Engineer and Land Surveyor. A.M. Can. Soc. C.E. Morrisburg, Ont.	
1.*L. C. Charlesworth, D.L.S....	Director of Surveys for Alberta. Edmonton, Alta.	
1. T. H. Dunn, O.L.S.	Engineer and Surveyor. Winchester, Ont.	
1. J. M. R. Fairbairn, P.L.S....	Assistant Engineer, C.P.R. Westmount, Que.	
4.*W. Fingland	Architect and Structural Engineer. 334 Portage Ave. Winnipeg, Man.	
1. C. Forrester	Toronto, Ont.	
1.*Walter J. Francis, C.E.	Consulting Engineer, M. Can. Soc. C.E., 28 Commercial Union Bldg. M. Am. Soc. C.E. Montreal, Que.	
3.*A. R. Goldie	Manager, Goldie & McCulloch Co. Galt, Ont.	
3. S. C. Hanly	Midland Engine Works Co. Midland, Ont.	
4.*J. Keele, B.A.Sc.	Geological Survey of Canada. Ottawa, Ont.	
1. J. T. Laidlaw, B.A.Sc., M.E.,	Consulting Mining Engineer. Cranbrook, B.C.	
3. F. L. Lash	Manager, Electrical Supply Co., Bandoeng, Java. Board of Trade Bldg.	
1. A. L. McAllister, B.A.Sc. ...	Draftsman. 1314 Traders Bank Bldg., Toronto, Ont.	
1. T. J. McFarlen	Chemist. 80 Waverley Rd., Toronto, Ont.	

*Diploma with honours.

1893—*Continued.*

Course.	Name and address.	Occupation.
1.*A. J. McPherson, B.A.Sc.	Superintendent of Highways, D.L.S., Regina, Sask.	Province of Saskatchewan.
1. A. F. Macallum, B.A.Sc.	City Engineer. Hamilton, Ont.	
1. W. T. Main	Division Engineer, Wells St. Depot, Chicago, Ill.	C. & N. W. Ry.
1. V. G. Marani	City Building Inspector, City Hall. Cleveland, Ohio	
1. W. Mines, B.A.Sc.	With Brown Hoisting Co. Cleveland, Ohio.	
3.*J. M. Robertson	Supt. Repair and Testing Dept., Montreal, P.Q.	Montreal Light, Heat and Power Co.
1. R. Russell	Railway Contractor. Pembroke, Ont.	
1.*F. N. Speller, B.A.Sc.	Metallurgical Engineer, National Pittsburgh, Pa.	Tube Co.
1. R. H. Squire, B.A.Sc., O.L.S.	(Deceased.)	
1. W. V. Taylor, O.L.S.	Dominion Engineering and Con- struction Co. A.M. Can. Soc. C.E., Montreal, P.Q.	
1.*R. B. Watson	Dept. of Public Works. Regina, Sask.	

1894.

3.*R. W. Angus, B.A.Sc.	Professor of Mechanical Engineer- ing, University of Toronto.	Toronto, Ont.
1. H. F. Barker	Box 31, Halifax, N.S.	
1. A. T. Beauregard, B.A.Sc.	Laboratory Engineer, Public Ser- vice Corporation of New Jersey.	East Orange, N.J.
1. A. E. Bergey	Carnegie Technical School. Pittsburgh, Pa.	
3. D. G. Boyd	Draftsman, Public Works Dept. Toronto, Ont.	
3. W. A. Bucke	With Canadian General Electric Co. Toronto, Ont.	

*Diploma with honours.

1894—*Continued.*

Course.	Name and address.	Occupation.
1. J. Chalmers, O.L.S.	Structural Engineer, A.M. Can. Soc. C.E., Edmonton, Alta.	Dept. of Public Works.
4.*J. A. Ewart, B.A.Sc.	Architect and Engineer. 193 Sparks St., Ottawa, Ont.	
3. W. J. Herald, B.A.Sc.	Engineering Dept., Canada Toronto, Ont.	Foundry Co.
3. H. E. Job, B.A.Sc.	Mfg. of Electrical Machinery and Hamilton, Ont.	Apparatus.
3. A. C. Johnston, B.A.Sc.,	Vice-President and Chief Engineer, M.E., Philadelphia, Pa.	The J. M. Dodge Company.
1. S. M. Johnston, B.A.Sc.,	City Engineer. P.L.S., Greenwood, B.C.	
1. J. E. Jones	Engineers' Club, New York, N.Y.	
3. N. M. Lash	Asst. Electrical Engineer, Montreal, P.Q.	Bell Telephone Co.
1.*A. L. McTaggart, B.A.Sc. ...	Office of A. G. McKee, Rockefeller Bldg., Cleveland, O.	Consulting Engineer.
3.*W. Minty, B.A.Sc.	With Messrs. Yates & Thom, Ltd., Blackburn, Eng.	Engineers.
3. C. J. Nicholson	Assistant Engineer, Hamilton, Hamilton, Ont.	Guelph & Waterloo Ry.
1. H. Rolph	31 Burton Ave., Westmount, Que.	
1. J. D. Shields, B.A.Sc.	Sewer Engineer, Staff of City Toronto, Ont.	Engineer.
1. Angus Smith, O.L.S.	City Engineer. A.M. Can. Soc. C.E. Regina, Sask.	
3. A. K. Spotton	Chief Engineer, Goldie & McCulloch Galt, Ont.	Engine Works.
3. R. T. Wright, B.A.Sc.	Engineering Dept., Westinghouse East Pittsburgh, Pa.	Machine Co.

*Diploma with honours.

1895.

Course.	Name and address.	Occupation.
1. J. Armstrong, B.A.Sc.	District Engineer, G.T.P. Ry. Quebec, Que.	
3. A. E. Blackwood	Manager, New York Office, 30 Church St., New York.	Sullivan Machinery Co.
1. E. J. Boswell, D.L.S.	Winnipeg, Man.	
3. G. Brebner (deceased).		
3. W. M. Brodie, B.A.Sc.	With the Green Engineering Co. of Pittsburgh, Pa.	Chicago.
3. L. L. Brown	Supt., The Foundation Co. 115 Broadway, New York.	
4. R. J. Campbell	Artist, Chicago Tribune. Chicago, Ill.	
3. A. W. Connor, B.A., C.E....	Bowman & Connor, 36 Toronto St., Toronto, Ont.	Consulting Engineers.
1. J. S. Dobie, B.A.Sc., O. & D.L.S., Thessalon, Ont.		
1. F. W. Guernsey	Engineer, Consolidated Mining and Trail, B.C.	Smelting Co.
4.*A. H. Harkness, B.A.Sc.	Structural Engineer, Toronto, Ont.	Canada Foundry Co.
3. H. S. Hull, B.A.Sc.	Structural Drawing, Johnstown, Pa.	Cambria Steel Co.
3.*J. McGowan, B.A., B.A.Sc...	Associate Professor of Applied Me- chanics, University of Toronto.	
3. W. N. McKay	Manager, Bank of Hamilton. Georgetown, Ont.	
3. H. L. McKinnon, B.A.Sc. ...	Vice-President of The C. O. Bart- lett & Snow Co.	
1. W. W. Meadows, D. & O.L.S., Maple Creek, Sask.	Dept. of Public Works.	
1. F. J. Robinson, D. & O.L.S.,	Deputy Minister of Public Works, Regina, Sask.	Saskatchewan.
3. F. T. Stocking	Hydro-Electric Commission. Toronto, Ont.	
3. R. C. C. Tremaine, B.A.Sc....	(Deceased.)	

*Diploma with honours.

1896.

Course.	Name and address.	Occupation.
2.*J. W. Bain, B.A.Sc.	Toronto, Ont.	Associate Professor of Applied Chemistry, University of Toronto.
2. L. T. Burwash	Whitehorse, Y.T.	Mining Recorder.
3.*G. M. Campbell	Riverside, Ill.	Supt., Power Apparatus Shops, Western Electric Co.
2. J. A. Decew, B.A.Sc.	615 Canadian Express Bldg., Montreal, Que.	Consulting Chemical Engineer.
3.*H. P. Elliott, B.A.Sc., M.E.,	Pittsburgh, Pa.	Electrical Engineer, Westinghouse Electric and Mfg. Co.
3. W. C. Gurney	Toronto, Ont.	Vice-President, Gurney Foundry Co., Limited.
3.*H. V. Haight, B.A.Sc.	Sherbrooke, P.Q.	Chief Engineer, Canadian Rand Drill Co.
1. W. F. Laing (deceased).		
3. R. R. Lawrie (deceased).		
3. C. MacBeth, B.A.Sc. (deceased).		
3. J. A. MacMurchy	Pittsburgh, Pa.	Chief Draftsman, Turbine Dept. Westinghouse Machine Co.
1. T. Martin, B.A.Sc.	Calgary, Alta.	Asst. Divisional Engineer, C.P.R. Western Division.
3. R. R. Scheibe	Toronto, Ont.	With Toronto Engraving Co., Ltd.

1897.

2. E. Andrews, B.Sc.	Portmadoc, N. Wales.	Res. Engineer, Maenofferen Slate A.M.I., C.E., Quarry Co., Limited.
2.*J. A. Bow	Great Falls, Mon.	B. & M. Smelter.
1. H. S. Carpenter, B.A.Sc.,	O.L.S., Regina, Sask.	Director of Surveys, Department of Public Works.
5. H. W. Charlton, B.A.Sc.	Ottawa, Ont.	Assistant Chemist at Experimental Farm.
4.*E. A. Forward	Lockport, Man.	Engineer-in-charge, St. Andrew's A.M. Can. Soc. C.E., Lock and Dam.

*Diploma with honours.

1897—Continued.

Course.	Name and address.	Occupation.
3.*A. T. Gray, B.A.Sc.	Designing Engineer on Steam Tur-	
	Schenectady, N.Y.	bines, General Electric Co.
3. W. A. B. Hicks	With Lackawanna Steel Co.	
	Buffalo, N.Y.	
4. C. F. King	Rep. of Mortimer Co. of Ottawa.	
	Toronto, Ont.	
1. H. W. Proudfoot (deceased).		
2.*A. H. A. Robinson, B.A.Sc..	Mining Inspector, Dept of Lands,	
	M.A.I., M.E., Toronto.	Forests and Mines.
4. W. F. Scott	Structural Engineer and Consult-	
	Toronto, Ont.	ing Architect.
3.*W. R. Smiley, B.A.Sc.	With Wellman-Seaver-Morgan En-	
	Cleveland, Ohio.	gineering Co.
2.*W. W. Stull, B.A.Sc., O.L.S.,	Surveyor and Mining Engineer.	
	Sudbury, Ont.	
1.*M. B. Weekes, B.A.Sc.,	Dept. of Public Works.	
	D.L.S., Regina, Sask.	
1. E. A. Weldon	Provincial Land Surveyor's Office.	
	Winnipeg, Man.	

1898.

1. W. H. Boyd, B.A.Sc.	Geological Survey of Canada.	
	Ottawa, Ont.	
2. W. E. H. Carter, B.A.Sc. ...	Consulting Mining Engineer,	
	Toronto, Ont.	83 & 85 Front Street East.
3. E. H. Darling	Assistant Engineer, Hamilton	
	A. M. Can. Soc. C.E.,	Bridge Works Co.
	Hamilton, Ont.	
1. W. F. Grant, B.A.Sc.	City Engineer.	
	Sault Ste. Marie, Ont.	
1. J. S. Kormann, B.A.Sc.	Manager, Kormann Brewing, Ltd.	
	Toronto, Ont.	
3. J. E. Lavrock	Draftsman, Hermon & Burwell.	
	Vancouver, B.C.	
4. D. Macintosh, B.A.Sc., B.	Chief Supt., F. M. Andrews & Co.,	
	Arch., New York, N.Y.	Metropolitan Tower.
1. F. W. McNaughton, O.L.S.,	Deputy Minister of Public Works.	
	Winnipeg, Man.	
1. J. H. Shaw, O. L. S.	Surveyor and Engineer.	
	North Bay, Ont.	

*Diploma with honours.

1898—*Continued.*

Course.	Name and address.	Occupation.
3. A. E. Shipley, B.A.Sc.	Nelson, B. C.	Manager, Nelson Coke & Gas Co.
3.*F. C. Smallpiece, B.A.Sc. ...	Montreal, P.Q.	Asst. Manager, Canadian General Electric Co.
1. R. W. Smith, P.L.S.	Revelstoke, B.C.	Surveyor.
1.*J. A. Stewart, M.A.	Hamilton, Ont.	Engineer and Contractor, 67 Federal Life Bldg.
1.*H. L. Vercoe	Montreal, Que.	Chief Draftsman, Grand Trunk Pacific Ry.
3. T. A. Wilkinson	New York, N.Y.	Statistician, Westinghouse Church Kerr Co.
3. D. A. Williamson, B.A.Sc. ...	Hamilton, Ont.	With Hamilton Bridge Works Co.

1899.

3.*T. Barber	Meaford, Ont.	Hydraulic Engineer, Chas. Barber & Sons.
2. J. T. M. Burnside, B.A.Sc....		
3. L. B. Chubbuck, B.A.Sc.....	Hamilton, Ont.	Engineer, Canadian Westinghouse Co.
2. G. A. Clothier	Rossland, B.C.	Engineer, Le Roy Mining Co.
1. C. Cooper	Carlyle, Sask.	Surveyor.
2. R. W. Coulthard, B.A.Sc. ...	Blairmore, Alta.	General Manager, West Canadian Collieries, Ltd.
3. J. A. Craig, B.A.Sc.	Toronto, Ont.	Office of Willis Chipman, C.E.
2. J. C. Elliott	Kelso, Ont.	
3. W. E. Foreman, B.A.Sc.	Pittsburgh, Pa.	Construction Dept., Westinghouse Electric and Mfg. Co.
3. E. Guy, B.A.Sc.	Industry, Pa.	Engineering Dept., Westinghouse Electric and Mfg. Co.
3.*W. Almon Hare, B.A.Sc.....	Toronto, Ont.	Secy-Treas. and Chief Engineer, A.M. Can. Soc. C.E., The Standard Engineering Co.

*Diploma with honours.

1899—*Continued.*

Course.	Name and address.	Occupation.
1. R. Latham, B.A.Sc.	Chief Engineer, T. H. & B. Ry. Hamilton, Ont.	
3. W. Monds, B.A.Sc.	Clark & Monds, 36 Toronto St., Toronto, Ont.	Consulting Engineers.
1. J. Patterson, B.A.	Physicist, Dominion Observatory. Toronto, Ont.	
3. A. S. H. Pope, B.A.Sc.	Pope & Wilcox, Portland, Oregon.	Elec. & Mech. Engineers.
2.*G. E. Revell, B.A.Sc.	Nelson, B.C.	
3.*E. Richards, B.A.Sc.	Asst. Electrical Engineer, Toronto, Ont.	City of Toronto.
3. G. A. Saunders	With Westinghouse Electric & Wilkinsburg, Pa.	Mfg. Co.
1.*T. Shanks, B.A.Sc., D.L.S....	Topographical Surveys Branch, Ottawa, Ont.	Dept. of the Interior.
1.*D. C. Tennant, B.A.Sc.	With Dominion Bridge Co. Lachine Locks, P.Q.	
3. W. W. VanEvery	Estimating and Sales Engineer, Milwaukee, Wis.	Allis-Chalmers Co.
3. W. E. Wagner, B.A.Sc.	With Toronto Ferry Co. Toronto, Ont.	
2. G. H. Watt, D.L.S.	Dominion Land Surveyor. Ottawa, Ont.	
3. E. Yeates	Manager, London Machine Tool Hamilton, Ont.	Co., Ltd.

1900.

1. J. L. Allan	Office of Provincial Engineer. A.M. Can. Soc. C.E., Halifax, N.S.	
2. E. G. R. Ardagh, B.A. Sc....	Lecturer in Applied Chemistry, Toronto, Ont.	University of Toronto.
3. J. A. Bain	Structural Engineer, Dept. of Ottawa, Ont.	Public Works of Canada.
3. J. H. Barley, B.A.Sc.	Canadian Westinghouse Co. Hamilton, Ont.	
2.*M. C. Boswell, M.A., Ph.D..	Lecturer in Organic Chemistry, Toronto, Ont.	University of Toronto.

*Diploma with honours.

1900—*Continued.*

Course.	Name and address.	Occupation.
1. L. T. Bray, D. & O.L.S.	Dist. Engineer & Surveyor. Edmonton, Alta.	
3. J. Clark	Electrician, Pittsburgh, Pa.	P. & L. E. R. R.
2. J. E. Davison, B.A.Sc.	Engineering Staff, Can. Northern Toronto, Ont.	Ry.
3. E. D. Dickinson	With General Electric Co. Schenectady, N.Y.	
3. G. W. Dickson, B.A.Sc.	With Smith, Kerry & Chace. Toronto, Ont.	
2.*H. A. Dixon, B.A.Sc.,	Engineering Staff, Canadian M.L.S., Winnipeg, Man.	Northern Ry.
2. C. H. Fullerton, O.L.S.	Engineer and Surveyor. New Liskeard, Ont.	
3. W. S. Guest, B.A.Sc.	Demonstrator in Electrical En- Toronto, Ont.	gineering, University of Toronto.
3. W. Hemphill, B.A.Sc.	Superintendent, Cataract Power & Buffalo, N.Y.	Conduit Co.
3. S. E. M. Henderson	Designing Engineer, General Schenectady, N.Y.	Electric Co.
3. J. A. Henry	Designing Engineer, General Schenectady, N.Y.	Electric Co.
2. H. S. Holcroft, B.A.Sc.,	Surveyor, Peace River Dist., D.L.S.	
3. H. A. Johnston	Manager, Johnston Oil Engine Co., 148 Clinton St., Toronto, Ont.	Limited.
3. J. C. Johnston	Plant Inspector, Warren Boston, Mass.	Bituminous Paving Co.
2.*J. A. Johnston, B.A.Sc.	Contractor. Ignace, Ont.	
2. R. E. McArthur	Resident Engineer, C.P.R. Calgary, Alta.	
2. J. G. McMillan, B.A.Sc.	Mining Engineer. 39 Wood St., Toronto, Ont.	
3. L. Haun Miller	Sales Agent, Bethlehem Steel Co. Cleveland, O.	

*Diploma with honours.

1900—*Continued.*

Course.	Name and address.	Occupation.
2. E. V. Neelands, B.A.Sc.	Hargrave Mines. Cobalt, Ont.	
1.*E. H. Phillips, D.L.S.	Phillips & Phillips, Civil Engineers Saskatoon, Sask.	and Surveyors.
2. J. R. Roaf, B.A.Sc.	Draftsman, Crow's Nest Pass Coal Michel, B.C.	Co.
3.*C. H. E. Rounthwaite	Draftsman, G.T.P. Ry. Winnipeg, Man.	
2. H. W. Saunders, B.A.Sc.	Chief Draftsman, Gary, W. Va.	U.S. Coal & Coke Co.
1. A. Taylor, D.L.S. & M.L.S....	Engineer and Surveyor. Portage La Prairie, Man.	
1. W. C. Tennant, B.A.Sc. (deceased).		
2. S. M. Thorne, B.A.Sc.	Engineering Staff, Cobalt, Ont.	Silver Leaf Mine.
1. F. W. Thorold, B.A.Sc.	Assistant City Engineer on Const. Toronto, Ont.	of Sewage System.
1. H. M. Weir, B.A.Sc.	With Real Del Morte Co. Pachuca, Mex.	
3. F. D. Withrow	Patent Examiner, Dept. of Ottawa, Ont.	Agriculture.

1901.

1. R. H. Barrett, B.A.Sc., O.L.S. (Deceased.)		
3. W. G. Beatty	Manager, Beatty Bros., Imple- Fergus, Ont.	ment Manufacturers.
3. G. M. Bertram	Representative of the Sullivan Ma- Joplin, Mo.	chinery Co.
3. W. J. Bowers (deceased).		
3. E. T. J. Brandon, B.A.Sc. ...	Assistant Engineer Hydro-Electric Toronto, Ont.	Power Comm.
3. W. P. Brereton, B.A.Sc.	Asst. Engineer, Power Winnipeg, Man.	Construction Dept.
3. J. T. Broughton	Chief Engineer, Scottdale Scottdale, Pa.	Foundry & Machine Co.
3.*W. G. Chace, B.A.Sc.	Firm of Smith, Kerry & Chace. Carnegie Library, Winnipeg, Man.	

*Diploma with honours.

1901—*Continued.*

Course.	Name and address.	Occupation.
3. A. G. Christie	Professor of Steam Engineering, 1713 Munro St., Madison, Wis.	University of Wisconsin.
3. J. R. Cockburn, B.A.Sc.	Lecturer in Descriptive Geometry, Toronto, Ont.	University of Toronto.
1. W. A. Duff	Asst. Bridge Engineer, Ottawa, Ont.	Transcontinental Ry.
2.*D. E. Eason, B.A.Sc.	Division Engineer, Peterboro', Ont.	Trent Valley Canal.
1.*S. Gagné, B.A.Sc.	Contractor for Chicoutimi Power A.M. Can. Soc. C.E., Chicoutimi, P.Q.	and Electric Co.
3. N. R. Gibson, B.A.Sc.	Asst. Engineer, Winnipeg, Man.	Power Const. Dept.
2. A. T. E. Hamer	Engineering Staff, Canadian Wahnapitae, Ont.	Northern Ry. Co.
1. C. Harvey, B.A.Sc., D.L.S..	Consulting Engineer and Surveyor. Kelowna, B.C.	
2. F. C. Jackson	Railway Contractor, La Tuque, P.Q.	National Trans. Ry.
3.*A. Laidlaw	District Manager, Trussed Concrete Kansas City, Mo.	Steel Co.
3. W. C. Lumbers	Engineering Staff, C.P.R. Calgary, Alta.	
3. A. C. Macdougall	Asst. Superintendent, Aluminium Massena, N.Y.	Co. of America.
3. A. T. C. McMaster, B.A.Sc....	Inspector, Hydro-Electric Power 742 Spadina Ave., Toronto, Ont.	Comm.
1. G. MacMillan	Topographical Surveys Branch, Ottawa, Ont.	Dept. of Interior.
3.*H. G. McVean, B.A.Sc.	Contractor and Engineer. Moose Jaw, Sask.	
2. W. C. Matheson	With McKenzie, Mann Co. Joliette, P.Q.	
3. H. T. Middleton	Englewood Cliffs, N.J.	
2. J. L. R. Parsons, B.A.,	Engineer and Surveyor. D.L.S., Winnipeg, Man.	

*Diploma with honours.

1901—*Continued.*

Course.	Name and address.	Occupation.
1. G. H. Power	Western Canada Rep. of Willis North Battleford, Sask.	Chipman, C.E.
3.*H. W. Price, B.A.Sc.	Lecturer in Electrical Engineering, Toronto, Ont.	University of Toronto.
1. H. P. Rust, B.A.Sc.	With Messrs. Vielé, Blackwell & A.M. Can. Soc. C.E., New York, N.Y.	Buck.
3. M. V. Sauer, B.A.Sc.	Assistant Engineer, Ontario Niagara Falls, Ont.	Power Co.
3. W. H. Stevenson, B.A.Sc. ...	Secretary, Power Plant Specialty Monadnock Block, Chicago, Ill.	Co.
1. R. D. Willson	Asst. City Engineer. Winnipeg, Man.	

1902.

3.*H. G. Barber	Topographical Surveys Branch, Ottawa, Ont.	Department of the Interior.
1. W. J. Blair, B.A.Sc., D. & Civil Engineer and Surveyor. O.L.S., New Liskeard,		Ont.
3. J. M. Brown	With Westinghouse Machine Co., Pittsburgh, Pa.	Steam Turbine Dept.
2. W. G. Campbell		Toronto, Ont.
2. A. R. Campbell.....	Universal Mfg. Co., Ltd., Toronto, Ont.	St. James Chambers.
3. C. G. Carmichael (deceased).		
2.*W. Christie, B.A.Sc.	Dominion Land Surveyor. Prince Albert, Alta.	
2. F. T. Conlon	Welland Canal Engineering Staff. Thorold, Ont.	
3. H. V. Connor	With Westinghouse Electric and Pittsburgh, Pa.	Mfg. Co.
2.*M. T. Culbert	Manager, O'Brien Mine. Cobalt, Ont.	
2. R. Cumming	General Contractor, Toronto, Ont.	50 Front St. E.
1. W. E. Douglas, B.A.....	Contractor, 152 Bay St. Toronto, Ont.	

*Diploma with honours.

1902—*Continued.*

Course.	Name and address.	Occupation.
3.*R. J. Dunlop.....	With Canadian Westinghouse Co. Toronto, Ont.	
2. W. M. Edwards, B.A.Sc.....	With Smith, Kerry & Chace. 1510 5th St. West, Calgary, Alta.	
3. W. Elwell (deceased).		
2. J. M. Empey, B.A.Sc., O.L.S.,	Dist. Engineer and Surveyor, D.L.S., Calgary, Alta.	Dept. of Public Works.
2.*D. L. H. Forbes	Metallurgical Engineer El Tigre Yzabal, Sonora, Mex.	Mining Co.
1.*A. E. Gibson, B.A.Sc.	Office of Haney & Miller, Toronto, Ont.	Engineers and Contractors.
3. A. C. Goodwin	Draftsman, Aluminium Co. Pittsburgh, Pa.	of America.
3. C. P. Henwood	Draftsman, McKeesport, Pa.	National Tube Co.
3. D. M. Johnston	Inspector, London Sub-station, London, Ont.	Hydro-Electric Power Comm.
2. R. H. Knight, B.A.Sc.,	Driscoll & Knight, D.L.S., Edmonton, Alta.	Engineers and Surveyors.
5.*F. L. Langmuir, B.A.Sc.,	Chemist, M. Langmuir Mfg. Co. Ph.D., Toronto, Ont.	
3. A. H. McBride, B.A.Sc.....	Assistant Engineer, Hydro- Toronto, Ont.	Electric Power Commission.
1. A. L. McLennan, D.L.S.	Office of York Co., Engineer. Toronto, Ont.	
3. J. T. Mackay	Student in Faculty of Medicine, Toronto, Ont.	University of Toronto.
3. J. F. S. Madden	Erecting Engineering Dept., Winnipeg, Man.	Can. Gen. Electric Co.
3.*C. H. Marrs	Designing Engineer, Pittsburgh, Pa.	Riter-Conley Mfg. Co.
3. P. Mathison, B.A.Sc.	Electrical Eng., Canadian Hamilton, Ont.	Westinghouse Co.
3. R. S. Mennie	With Crucible Steel Co. of Pittsburgh, Pa.	America.
2. H. H. Moore, D.L.S.....	Dominion Land Surveyor and En- A.M. Can. Soc. C.E.,	gineer. Calgary, Alta.

*Diploma with honours.

1902—*Continued.*

Course.	Name and address.	Occupation.
1.*T. S. Nash	Topographical Surveys Branch, Ottawa, Ont.	Department of the Interior.
1. G. G. Powell, B.A.Sc.	Asst. City Engineer, Roadways Toronto, Ont.	Dept.
1.*W. F. Ratz, D.L.S. (deceased)		
3. H. D. Robertson, B.A.Sc. ...	Miller, Cumming & Robertson. Toronto, Ont.	Engineers and Contractors.
3.*D. Sinclair, B.A.Sc.(deceased)		
2.*I. J. Steele, D.L.S.....	Topographical Surveys Branch, Ottawa, Ont.	Dept. of Interior.
3. W. H. Sutherland, B.A.Sc....	Asst. Engineer, Montreal Water 107 St. James St., Montreal, Que.	and Power Co.
3.*T. F. Taylor	Toronto, Ont.	
2.*C. M. Teasdale	Surveyor. Concord, Ont.	
3. A. A. Wanless	Shop Supt. Nova Scotia Steel and Sydney Mines, N.S.	Coal Co.
3. H. J. Zahn, B.A.Sc.....	Detroit, Mich.	

1903.

3. H. G. Acres	Asst. Engineer, Hydro-Electric Toronto, Ont.	Power Commission.
1. J. G. R. Alison	With Riter-Conley Mfg. Co. Pittsburgh, Pa.	
3.*H. H. Angus, B.A.Sc.....	Draftsman, Bethlehem Steel Co. Bethlehem, Pa.	
3. J. A. Beatty	Morrow & Beatty, Contractors. Peterboro', Ont.	
3.*J. Breslove	Steam Turbine Engineer, Westing- East Pittsburgh, Pa.	house Machine Co.
2. J. H. Burd, O.L.S.	Engineer and Surveyor. Sudbury, Ont.	
1.*E. L. Burgess, D.L.S.....	Topographical Surveys Branch Ottawa, Ont.	Department of the Interior.
2. N. A. Burwash, B.A.Sc.....	Surveyor. Whitehorse, Y.T.	
1. F. F. Clarke, D. & O.L.S.....	Divisional Engineer, A.M. Can. Soc. C.E., Toronto, Ont.	Can. Northern Ry.

*Diploma with honours.

1903—*Continued.*

Course.	Name and address.	Occupation.
2. C. L. Coulson.....	Welland, Ont.	
3.*A. E. Davison, B.A.Sc.....	Toronto, Ont.	Engineering Staff, Hydro-Electric Power Comm.
3. C. J. Fensom, B.A.Sc.....	Toronto, Ont.	Consulting Mechanical Engineer, 43 Victoria St.
2.*E. O. Fuce, O.L.S.	Galt, Ont.	Consulting Civil Engineer.
3*F. A. Gaby, B.A.Sc.....	Toronto, Ont.	Chief Asst. Engineer, Hydro-Electric Power Commission.
1. J. C. Gardner, B.A.Sc.....	Niagara Falls, Ont.	City Engineer.
3. R. E. George.....	Dover, N.H.	Electrical and Gas Engineer, The United Gas & Electric Co.
1.*P. Gillespie, B.A.Sc.....	Toronto, Ont.	Lecturer in Theory of Construction, University of Toronto.
1. W. A. Gourlay	Toronto, Ont.	Engineering Staff, C.P.R.
2. J. F. Hamilton, B.A.Sc.,C.E..	Lethbridge, Alta.	Hamilton & Young, Dominion Land Surveyors and Engineers.
2. G. S. Hanes, B.A.Sc.,O.L.S...	North Vancouver, B.C.	City Engineer.
2. F. Y. Harcourt, B.A.....	Port Arthur, Ont.	Engineer, Public Works Dept.
1. L. J. Hayes	Chicago, Ill.	Structural Engineer, Corn Products Refining Co.
1.*F. D. Henderson	for D.L.S., Ottawa, Ont.	Topographical Surveys Branch, Sec'y Bd. of Examiners Department of the Interior.
5.*J. A. Horton		
3. J. G. Jackson.....	Toronto, Ont.	Electrical Dept., City Hall.
3. C. K. Johnston.....	Pefferlaw, Ont.	Merchant.
1. H. Johnston, O.L.S.....	Berlin, Ont.	Davis & Johnston, Civil Engineers and Surveyors.
3. A. G. Lang	Toronto, Ont.	Electrical Dept., City Hall.
1.*A. J. Latornell, B.A.Sc.....	Edmonton, Alta.	City Engineer.

*Diploma with honours.

1903—Continued.

Course.	Name and address.	Occupation.
1.*H. J. McAuslan, B.A.Sc.,	Staff of T. & N. O. Ry. O.L.S., North Bay, Ont.	
3. J. A. McFarlane, B.A.Sc.....	Chief Draftsman, Hamilton Bridge Hamilton, Ont.	Works Co.
1.*A. L. McNaughton.....	With G.T.P. Co. Prince Rupert, B.C.	
5.*F. G. Marriott, B.A.Sc.....	Chemist and Supt. Asphalt Plant, Toronto, Ont.	City Testing Laboratory.
3.*C. A. Maus	Paris, Ont.	
3.*M. L. Miller	Draftsman, McClintic-Marshall Pottstown, Pa.	Construction Co.
3. P. H. Mitchell	Consulting Electrical Engineer, Toronto, Ont.	Traders' Bank Bldg.
2.*R. H. Montgomery, B.A.Sc.,	Engineer and Surveyor. O. and D.L.S., Prince Albert, Sask.	
1. F. A. Moore	Engineering Dept., C. N. Ry. Winnipeg, Man.	
3. E. E. Mullins	Baldwin Locomotive Works. Philadelphia, Pa.	
3. I. H. Nevitt, B.A.Sc.....	Construction, Bell Telephone Co. Toronto, Ont.	
1. E. W. Oliver, B.A.Sc.....	Asst. Chief Engineer, Canadian Toronto, Ont.	Northern Ry. System.
3. J. P. Oliver	Supt. of Construction, The Ameri- Arabi, La.	can Sugar Refining Co.
3. J. D. Pace, B.A.Sc.....	Construction Engineer, Canadian Montreal, Que.	Westinghouse Co.
3. B. B. Patten, B.A.Sc.....	Rutherford & Patten, St Catharines, Ont.	Engineers and Surveyors.
2. D. H. Philp	Georgian Bay Canal Survey. Ottawa, Ont.	
3.*D. H. Pinkney	National Tube Dept., U.S. Steel Elyria, O.	Corporation.
2. T. H. Plunkett, B.A.Sc.....	Toronto, Ont.	
1. D. F. Robertson, D.L.S.	Ottawa, Ont.	
3.*H. M. Scheibe, B.A.Sc.....	Engineer, Westinghouse Electric Pittsburgh, Pa.	& Mfg. Co.

*Diploma with honours.

1903—*Continued.*

Course.	Name and address.	Occupation.
1.*H. L. Seymour	Sanders & Seymour, Civil Engineers and Dominion Land Surveyors. Edmonton, Alta.	
1. J. H. Smith, D. & O.L.S.....	Engineer and Surveyor. Edmonton, Alta.	140 Jasper Ave. W.
3. H. G. Smith, B.A.Sc.....	(Deceased.)	
3. S. L. Trees, B.A.Sc.....	Supt. Mfg. Dept., Samuel Trees & Co., 42 Wellington St. East. Toronto, Ont.	
2. J. E. Umbach	Topographical Surveys Branch, Ottawa, Ont.	Department of the Interior.
1. J. Waldron, D.L.S.	Engineer and Surveyor. Moose Jaw, Sask.	
3.*S. B. Wass	Chief Engineer, Amostook Presque Isle, Me.	Valley Railroad.
3. J. A. Whelihan	Regina, Sask.	
3. H. F. White	With The Geo. White & Sons Co., London, Ont.	Ltd.
2.*C. G. Williams, B.A.Sc.....	Supt., Otisse Mining Co. Elk Lake, Ont.	
1.*N. D. Wilson, B.A.Sc.....	Gardner & Wilson. Niagara Falls, Ont.	
1.*C. R. Young, B.A.Sc.....	Lecturer in Applied Mechanics, A.M. Can. Soc. C.E. Toronto, Ont.	University of Toronto.

1904.

3.*J. H. Alexander, B.A.....	Youngstown, Ohio.	
3.*J. H. Barrett	With the Wm. Davies Co., Ltd. Toronto, Ont.	
3. M. B. Bonnell	Bobcaygeon, Ont.	
3. T. D. Brown, B.A.Sc.....	Barrie, Ont.	
3. F. W. Burnham, B.A.Sc.....	Steam & Electrical Dept., Milwaukee, Wis.	Allis-Chalmers-Bullock Co.
3. J. W. Calder, B.A.Sc.....	With Deloro Mining & Reduction Deloro Mines, Ont.	Co.
1. N. C. Cameron.....	Dominion Engineering and 4172 Dorchester St., Montreal, Que.	Construction Co.

*Diploma with honours.

1904—*Continued.*

Course.	Name and address.	Occupation.
1. A. J. Campbell, B.A.Sc.....	Toronto, Ont.	
3.*A. M. Campbell, B.A.Sc.....	1403 King St. W., Toronto, Ont.	
4. J. B. Challies	Hydraulic Engineer, Department Ottawa, Ont.	of the Interior.
2. C. A. Chilver	Walkerton, Ont.	
2. H. L. Chilver	Moosehorn Bay, Man.	
1. U. W. Christie, B.A.Sc.,	Astronomical Surveys Branch, O.L.S., Ottawa, Ont.	Dept. of the Interior.
2 P. C. Coates, B.A.Sc.....	Mining Engineer. Cobalt, Ont.	
1. S. B. Code	Civil Engineer and Land Surveyor. Smith's Falls, Ont.	
1.*T. F. Code, B.A.Sc (deceased).		
1.*W. A. Cowan	Resident Engineer, C.P.R. Farnham, P.Q.	
3.*S. E. Craig	With Manson Mfg. Co. Thorold, Ont.	
1.*S. R. Crerar, B.A.Sc., O.L.S..	Demonstrator in Surveying, Toronto, Ont.	University of Toronto.
3. W. M. Currie	Chief Inspector and Engineer, Hamilton, Ont.	Hamilton Steel and Iron Co.
3. H. H. Depew	Supt., Crow's Nest Pass Electric Ferne, B.C.	Light and Power Co.
2. A. J. Elder	Topographical Surveys Branch, Ottawa, Ont.	Department of the Interior.
2. J. G. Fleck	Fleck Bros. Ltd. Vancouver, B.C.	
1.*A. L. Ford, B.A.Sc.....	Government Inspector on Prince Rupert, B.C.	G.T.P. Ry.
3. W. S. Gibson, B.A.Sc.....	381 Park Rd. Toronto, Ont.	
1. J. P. Gordon	Engineering Staff, Willis Chipman, Toronto, Ont.	C.E.
3. W. W. Gray, B.A.Sc.....	Demonstrator in Thermodynamics, Toronto, Ont.	University of Toronto.

*Diploma with honours.

1904—*Continued.*

Course.	Name and address.	Occupation.
1. A. Gray, B.A.Sc.....	With St. Lawrence Starch Co. Port Credit, Ont.	
3. W. K. Greenwood, B.A.Sc....	Town Engineer. Orillia, Ont.	
1. L. D. Hara	Asst. Engineer, Welland Canal Co. St. Catharines, Ont.	
3. C. J. Harris, B.A.Sc.....	With Brantford Screw Co. Brantford, Ont.	
1. J. B. Heron, B.A.Sc.....	c. o. S. H. Sykes, Toronto, Ont.	1577 Danforth Ave.
1. E. M. M. Hill.....	Engineering Dept., Canadian Winnipeg, Man.	Northern Railway.
2. S. N. Hill	Topographical Surveys Branch, Ottawa, Ont.	Department of the Interior.
2. C. J. Ingles	With Ontario Power Co. Niagara Falls, Ont.	
1. E. A. James, B.A.Sc.....	Managing Editor, Canadian Toronto, Ont.	Engineer.
1. P. V. Jermyn, B.A.Sc.....	C.P.R. Construction Dept. 118 King St. West, Toronto, Ont.	
3. W. S. H. Keefe	Manager, Light, Heat and Power Fort Covington, N.Y.	Co.
3. W. J. Larkworthy (deceased).		
3. O. B. McCuaig, B.A.Sc.....	Wyse & Middlemist, Toronto, Ont.	43 Janes Building.
1. G. G. McEwen, B.A.Sc.....	Office of T. H. Dunn, O.L.S. Winchester, Ont.	
1.*W. G. McFarlane, B.A., B.A.Sc.	Engineer and Surveyor, Peace River Dist.	
3.*C. P. McGibbon, B.A.....	With Westinghouse Electric and East Pittsburgh, Pa.	Mfg. Co.
3. C. McKay, B.A.Sc. (deceased)		
1. D. McMillan	Woodville, Ont.	
3. G. J. Manson	With Manson Mfg. Co., Ltd. Thorold, Ont.	
1.*W. N. Moorhouse	Office of Sproatt & Rolph, Toronto, Ont.	Architects.

*Diploma with honours.

1904—Continued.

Course.	Name and address.	Occupation.
3. E. E. Moore	Engineer, Inter-State Iron Co. Glen Falls, N.Y.	
3. W. H. Munro	Assistant to J. B. McRae. Ottawa, Ont.	
3. G. Pace, B.A.Sc	With Canadian Westinghouse Co. Hamilton, Ont.	
3. W. S. Pardoe, B.A.Sc.....	Instructor, Civil Eng. Dept., Philadelphia, Pa.	University of Pennsylvania.
3. J. Paris	Resident Engineer, La Tuque, Que.	Trans. Ry.
2. J. Parke, B.A.Sc.....	Chemist and Assayer. Thessalon, Ont.	
3. W. J. Peaker	Top. Surveys Branch, Ottawa, Ont.	Dept. of Interior.
3.*A. E. Pickering	Asst. Engineer, Lake Superior Sault Ste. Marie, Ont.	Power Co.
1. D. L. C. Raymond, B.A.Sc...	Manager, The Concrete Engineer- ing and Construction Co., Ltd. Toronto, Ont.	
1. F. B. Reid, B.A.Sc.....	Astronomical Surveys Branch, Ottawa, Ont.	Dept. of the Interior.
3.*M. R. Riddell, B.A.Sc.....	Lecturer in Mechanical Engineer- ing, University of Toronto. Toronto, Ont.	
3. G. S. Roxburgh, B.A.Sc	Manager, Fetherstonhaugh & Co., Winnipeg, Man.	Patent Solicitors and Engineers.
2. F. N. Rutherford, B.A.Sc....	Rutherford and Patten, St. Catharines, Ont.	Surveyors and Engineers.
1.*J. D. Sheply, B.A.Sc., D.L.S.,	Dist. Surveyor and Engineer. N. Battleford, Sask.	
3. F. W. Slater, B.A.Sc.....	With General Electric Co. Schenectady, N.Y.	
3.*R. S. Smart	Manager, Fetherstonhaugh & Co., Ottawa, Ont.	Patent Solicitors and En- gineers.
1. D. A. Smith, B.A.Sc.....	Claude, Ont.	
3. W. J. Smither, B.A.Sc.....	50 St. Clair Ave., Toronto, Ont.	
3. S. E. Thomson, B.A.Sc.....	Engineering Staff, Electrical Niagara Falls, Ont.	Development Co.

*Diploma with honours.

1904—*Continued.*

Course.	Name and address.	Occupation.
3. C. J. Townsend, B.A.Sc	Toronto, Ont.	
1. D. T. Townsend, B.A.Sc.,	C.P.R. Land Department.	
	O.L.S., Winnipeg, Man.	
1. A. V. Trimble, B.A.Sc.....	Hydro-Electric Power Commission.	
	Toronto, Ont.	
3. B. B. Tucker, B.A.Sc.....	Resident Engineer, New York and	
	Morrisburg, Ont. Ontario Power Co.	
2.*E. Wade, B.A.....	Teacher.	
	Oakville, Ont.	
1.*E. W. Walker, B.A.Sc.....	Dept. of Public Works.	
	Regina, Sask.	
3. J. P. Watson, B.A.Sc.....	Draftsman, Motive Power Dept.	
	Montreal, Que. C.P. Ry.	
1. J. M. Weir	Engineering Staff, G.T. Ry.	
	Hamilton, Ont.	
1.* A. F. Wells, O.L.S., B.A.Sc..	Engineering Dept., Trussed	
	Toronto, Ont. Concrete Steel Co.	
1. W. R. Worthington, B.A.Sc..	Asst. Sewer Engineer,	
	Toronto, Ont. Staff of City Engineer.	
3. W. F. Wright	Sales Dept., Canadian General	
	Toronto, Ont. Electric Co.	

1905.

2. H. W. Arens (deceased).	
3. R. H. Armour	Westinghouse Electric & Mfg. Co.
	165 Broadway, New
	York.
3.*C. B. Aylesworth	Draftsman, Canadian Westing-
	Hamilton, Ont. house Co.
1.*W. Barber, B.A.Sc.....	Roadways Dept., City Hall.
	Toronto, Ont.
2.*W. A. Begg, B.A.Sc.....	Mining Engineer.
	Haileybury, Ont.
3.*G. G. Bell	Canadian Bridge Co.
	Walkerville, Ont.
1. J. C. Boeckh	With Boeckh Brush Co.
	Toronto, Ont.
3. W. M. Bristol	Canadian Westinghouse Co.
	Montreal, Que.

*Diploma with honours.

1905—*Continued.*

Course.	Name and address.	Occupation.
2.	W. C. Campbell..... Keene, Ont.	Mining Engineer.
3.	W. R. Carson..... High Bridge, N.J.	Construction Engineer, Taylor Iron and Steel Co.
1.	A. V. Chase..... Toronto, Ont.	Fellow in Surveying.
3.	S. R. A. Clement..... Toronto, Ont.	With Hydro-Electric Power Commission.
3.	T. E. Corrigan..... Bodie, Cal.	Chief Electrician, Standard Consolidated Mining Co.
1.*N.	L. R. Crosby, B.A.Sc..... Wilkinsburg, Pa.	Designer, McClintic-Marshall Const. Co.
1.	G. H. Ferguson, B.A.Sc..... Toronto, Ont.	
3.	H. S. Fierheller, B.A.Sc..... 595 Sherbourne St., Toronto, Ont.	
3.	F. W. Harrison..... 360 Pearl St., Brooklyn, N.Y.	Chief Mechanical Draftsman, Edi- son Electric Illuminating Co.
1.	M. C. Hendry, B.A.Sc..... Toronto, Ont.	
2.	C. S. L. Hertzberg..... Hamilton, Ont.	Dominion Power & Transmission Co.
3.	W. G. Hewson Toronto, Ont.	With Smith, Kerry and Chace.
1.	G. S. Jones Smith's Falls, Ont.	
3.*G.	Kribs Toronto, Ont.	With Smith, Kerry and Chace.
1.	A. Latornell, B.A.Sc Toronto, Ont.	Sewer Dept., City Hall.
3.	J. W. Leighton Toronto, Ont.	Secretary, Evans Rotary Engine Co.
1.*T.	R. Loudon, B.A.Sc Toronto, Ont.	Lecturer in Metallurgy, University of Toronto.
3.	S. E. McGorman Walkerville, Ont.	Draftsman, Canadian Bridge Co.
1.*W.	W. McGregor (deceased).	

*Diploma with honours.

1905—*Continued.*

Course.	Name and address.	Occupation.
2. D. W. McKenzie	Draftsman, Engineering Dept., Winnipeg, Man.	C. N. Ry.
3.*C. A. McLean	Canadian Westinghouse Co. Toronto, Ont.	
2. W. N. McLean		
3. F. G. Mace	Patent Examiner, Ottawa, Ont.	Dept. of Agriculture.
3. R. W. Moffatt, B.A.Sc.....	Demonstrator in Drawing, Toronto, Ont.	University of Toronto.
3. L. W. Morden.....	Canadian Westinghouse Co. Toronto, Ont.	
3. G. R. Munro, B.A.Sc.....	With Hudson Bay Survey. Peterboro', Ont.	
3.*W. G. Nicklin, B.A.Sc.....	Asst. Supt., Dalnu & Kiefer Front & Tetellier Sts. Grand Rapids, Mich.	Tanning Co.
1. E. D. O'Brien.....	With Transcontinental Ry. Nipigon, Ont.	
1.*B. B. Patten, B.A.Sc.....	Rutherford and Patten, St. Catharines, Ont.	Surveyors and Engineers.
1. E. P. A. Phillips, B.A.Sc.....	Town Engineer Bracebridge, Ont.	
1. W. B. Porte		
	Oakville, Ont.	
2. E. F. Pullen	Resident Engineer, Transconti- Cochrane, Ont.	ental R.R.
2. G. L. Ramsey, B.A.Sc.....		
	Dunnville, Ont.	
1. G. W. Rayner.....		
	Toronto, Ont.	
3.*R. B. Ross	Engineer, International Marine Ottawa, Ont.	Signal Co
5. T. E. Rothwell, B.A.Sc.....	Provincial Assay Office. Belleville, Ont.	
2.*G. S. Scott	Fellow in Geology, Toronto, Ont.	University of Toronto.
3. H. V. Serson.....	Engineer in charge, Power House Highbridge, N.J.	Const., Taylor Iron & Steel Co.
3. C. H. Shirriff, B.A.Sc.....		
	Toronto, Ont.	

*Diploma with honours.

1905—*Continued.*

Course.	Name and address.	Occupation.
3.*C. E. Sisson.....	Engineering Dept., Can. Gen. Elec. Peterboro', Ont.	Co.
1. D. L. N. Stewart, B.A.Sc.....	Collingwood, Ont.	
1. M. A. Stewart.....	Asst. City Engineer, Roadway Toronto, Ont.	Dept., City Hall.
3.*W. F. Stubbs.....	Assistant Engineer, Goldie & Galt, Ont.	McCulloch Co.
1. N. H. Sturdy	Designer, L. S. & M. S. Ry. Cleveland, O.	
1. W. G. Swan, B.A.Sc.....	Demonstrator in Strength of Ma- terials, University of Toronto.	
1.*F. H. Sykes, O.L.S, D.L.S....	Asst. Structural Engineer, with Toronto, Ont.	City Architect, City Hall.
3. L. R. Thomson, B.A.Sc.....	Demonstrator in Drawing, Toronto, Ont.	University of Toronto.
3. E. D. Tillson, B.A.Sc	Engineer for Const. Dept., Safety New York, N.Y.	Insulated Wire & Cable Co.
1.*J. J. Traill, B.A.Sc.....	Demonstrator in Hydraulics, Toronto, Ont.	University of Toronto.
1.*W. M. Treadgold, B.A.....	Lecturer in Surveying, Toronto, Ont.	University of Toronto.
3. W. E. Turner, B.A.Sc.....	With Utah Light & Ry. Co. Salt Lake City, Utah.	
3. Uren, A. E.	Editorial Staff, "Canadian Toronto, Ont.	Engineer."
3. J. M. Vaughan	Contractor. Toronto, Ont.	
1. H. L. Wagner, B.A.Sc.....	Draftsman, Hamilton Bridge Hamilton, Ont.	Works Co.
2. W. H. Young, B.A.Sc.,D.L.S.,	Hamilton & Young, Dominion Lethbridge, Alta.	Land Surveyors and Engineers.

1906.

1. F. Alport	Resident Engineer, Superior Junct., Ont.	Transcontinental Ry.
3.*W. L. Amos	Operator, Toronto Electric Toronto, Ont.	Light Co.
1. A. H. Arens.....	Resident Engineer, Inverness, C.B.	Inverness Ry. & Coal Co.

*Degree with honours.

1906—*Continued.*

Course.	Name and address.	Occupation.
3.*J. C. Armer, B.A.Sc	Editor, Toronto, Ont.	"Canadian Manufacturer."
1. M. H. Baker, B.A.Sc.....	Asst. City Engineer. St. Thomas, Ont.	
3. F. W. Baldwin	With Graham Bell, Esq. Baddeck, N.S.	
3. F. Barber, B.A.	Demonstrator in Surveying, Toronto, Ont.	University of Toronto.
3. F. Barber	York County Engineer, Toronto, Ont.	Adelaide St. E.
2. M. Bates, B.A.Sc. (deceased).		
2. J. P. Bellisle (deceased).		
3.*H. H. Betts, B.A.Sc.....	Rio de Janiero Tramway, Light & Rio de Janiero, Brazil.	Power Co.
5.*D. E. Beynon, B.A.Sc.....	With the Continental-Mexican Torreon, Coahuila, Mexico.	Rubber Co.
2. G. W. Bissett	With Drummond Mines. Giroux Lake P.O., Ont.	
3. W. C. Blackwood	Post-Graduate Course in Engineer- Toronto, Ont.	ing, University of Toronto.
3. H. E. Brandon, B.A.Sc.....	Coleman, Ont.	
1. M. E. Brian, B.A.Sc.....	City Engineer. Windsor, Ont.	
2. T. W. Brown	Post-Graduate Course in Engineer- Toronto, Ont.	ing, University of Toronto.
1.*A. E. K. Bunnell, B.A.Sc.	Engineering Staff, Willis Chipman, Estevan, Man.	C.E.
3. F. M. Byam	With Smith, Kerry and Chace. Toronto, Ont.	
3. A. Cameron	Draftsman, Canada Foundry Co. Toronto, Ont.	
3. A. W. Campbell, B.A.Sc	Inspector, Hydro-Electric Power Toronto, Ont.	Commission.
1. M. J. Carroll	Topographical Surveys Branch, Ottawa, Ont.	Department of the Interior.
3.*R. E. C. Chadwick	Staff of City Engineer. Toronto, Ont.	

*Degree with honours.

1906—*Continued.*

Course.	Name and address.	Occupation.
1.*G. T. Clark, B.A.....	City Engineer. Saskatoon, Sask.	
3.*G. A. Colhoun.....	Draftsman, The Hamilton Bridge Hamilton, Ont. Works Co., Ltd.	
1.*W. A. M. Cook, B.A.Sc.....	Engineer & Surveyor. Toronto, Ont.	
1.*E. L. Cousins, B.A.Sc.....	Resident Engineer, G. T. Ry., Toronto, Ont. Middle and Southern Div.	
4. A. G. Creighton.....	Creighton & McConnell, Architects Prince Albert, Sask. and Structural Engineers.	
4. W. N. Daniels.....	With John R. Wiggins & Co. 1215 Filbert St., Philadelphia, Pa.	
3.*N. P. F. Death, B.A.Sc	Death & Watson, Electrical En- 25 Jarvis St., gineers and Contractors. Toronto, Ont.	
3. C. S. Dundass, B.A.Sc.....	Demonstrator in Electrical Engi- Toronto, Ont. neering, University of Toronto.	
3. S. L. Fear	With Dunbar, Sullivan Dredging Amherstburg, Ont. Co.	
5.*C. C. Forward	Laboratory of the Inland Revenue Ottawa, Ont. Dept.	
5. C. W. Graham, B.A.Sc.....	Industrial Chemist, Wm. Davies Co. Toronto, Ont.	
1.*P. W. Greene	With Hydro-Electric Power Toronto, Ont. Commission.	
3. C. B. Hamilton, B.A.Sc.....	With Smith, Kerry and Chace. 43 Madison Ave., Toronto, Ont.	
1.*A. L. Harkness, B.A.Sc	With Dominion Bridge Co., Ltd. Lachine Locks, P.Q.	
1.*R. L. Harrison	Resident Engineer, Canadian Cobourg, Ont. Northern Ry.	
1. E. Harrison, B.A.Sc.....		
3. J. C. Hartney, B.A.Sc.....	Engineer & Salesman, Canadian Vancouver, B.C. Westinghouse Co.	
1. S. Hett, B.A.Sc.....	Surveyor. Sutton West, Ont.	
3. C. R. Hillis	With Toronto & Niagara Power Co. Toronto, Ont.	

*Diploma with honours.

1906—*Continued.*

Course.	Name and address.	Occupation.
3. C. W. Hookway, B.A.Sc.....	Allis-Chalmers Bullock Co. Montreal P.Q.	
3. R. H. Hopkins, B.A.Sc.....	Demonstrator in Electrical Engin- Toronto, Ont.	eering, University of Toronto.
1.*R. S. Houston.....	Emerson, Man.	
2.*W. Huber	Machinist, Crown Reserve Mine. Cobalt, Ont.	
3.*A. H. Hull, B.A.Sc.....	Hamilton, Ont.	
3. W. C. Jepson	Welland Canal Office. St. Catharines, Ont.	
1.*C. Johnston, B.A.Sc.....	Resident Engineer, Can. Northern Toronto, Ont.	Ry.
1. G. R. Jones, B.A.Sc.....	Fellow in Surveying, Toronto, Ont.	University of Toronto.
3. T. Jones, B.A.Sc.....	18 Meredith Crescent, Toronto, Ont.	
1.*A. E. Jupp, B.A.Sc.....	City Engineer's Dept. Toronto, Ont.	
3. J. D. Keppy.....	With Smith, Kerry and Chace. Toronto, Ont.	
1. J. L. Lang, B.A.Sc., D. &	Lang & Keys, Engineers O.L.S., Sault Ste. Marie, Ont.	and Surveyors.
3. A. P. Linton, B.A.Sc.....	With Dominion Bridge Co. Montreal, Que.	
4.*A. W. McConnell, B.A.Sc.....	Lecturer in Architecture, Toronto, Ont.	University of Toronto.
3.*D. G. McIlwraith.....	Draftsman, The Goldie & Galt, Ont.	McCulloch Co., Ltd.
2. J. A. MacKenzie	Manager, Nipissing Reduction Co. Cobalt, Ont.	
1.*J. V. McNab.....	Transitman, C.P.R. Engineering Kenora, Ont.	Staff.
3. J. A. McPherson.....	Student, Faculty of Medicine, Kingston, Ont.	Queen's University.
2. K. A. MacKenzie, B.A.Sc.....	Assistant Secretary and Librarian, Toronto, Ont.	Faculty of Applied Science.

*Diploma with honours.

1906—*Continued.*

Course.	Name and address.	Occupation.
1. W. MacKinnon	Erection Dept., McClintic Rankin, Pa.	Marshall Const. Co.
3.*W. MacLachlan, B.A.Sc.....	Electrical Supt., Dominion Govt. Port Colborne, Ont.	Grain Elevator.
3.*D. W. Marrs.....	Designer and Estimator, Pittsburgh, Pa.	Riter-Conley Mfg., Co.
3. W. A. Maxwell.....	Draftsman, Canadian Walkerville, Ont.	Bridge Co.
1.*J. M. Menzies, B.A.Sc.....	Missionary. Honan, China.	
3. L. R. Miller, B.A.Sc.....	Orillia, Ont.	
1.*B. F. Mitchell, B.A.Sc.....	City Engineer's Office. Edmonton, Alta.	
1. F. F. Montague.....	Law Student. 506 Union Bank Bldg., Winnipeg, Man.	
1.*W. J. Moore, O.L.S.....	Morris and Moore, Land Pembroke, Ont.	Surveyors and Architects.
1. C. R. Murdock.....	Toronto, Ont.	
2. C. J. Murphy.....	Post-Graduate Course in Engineering, University of Toronto. Toronto, Ont.	
1.*W. P. Near, B.A., B.A.Sc.....	Staff of City Engineer. Toronto, Ont.	
2. R. Neelands		
3. D. G. Park, B.A.Sc.....	Engineering Apprentice, West Allis, Wis.	Allis-Chalmers Co.
3. G. W. Paterson	Salesman, Canadian Financiers, Vancouver, B.C.	Ltd.
5. R. E. Pettingill	Chief Chemist, Port Colborne, Ont.	Portland Cement Co.
2.*R. C. Purser, B.A.Sc.....	With W. H. Young, D.L.S. Lethbridge, Alta.	
3. N. R. Robertson, B.A.Sc.....	Canada Life Bldg., Toronto, Ont.	
1. J. O. Roddick, B.A.Sc.....	Assistant Engineer, Dept of Public Works of Canada. Toronto, Ont.	

*Diploma with honours.

Course.	Name and address.	Occupation.
1. C. H. Rogers, B.A.Sc.....	Peterboro Canoe Co. Peterboro', Ont.	
2.*O. Rolfson, B.A.Sc., D.L.S.	Dominion Land Surveyor, Walkerville, Ont.	
1. R. C. Ross, B.A.Sc.....	Dept. of the Interior. Ottawa, Ont.	
1. K. G. Ross.....	With Lang & Keys, Engineers Sault Ste. Marie, Ont.	and Surveyors.
1.*H. T. Routly, O.L.S., D.L.S.	Routly, Summers & Malcolmson, Haileybury, Ont.	Engineers and Surveyors.
2. J. H. Ryckman.....	Bridge and Bldg. Dept., Chicago, Chicago, Ill.	Milwaukee & St. Paul Ry.
3.*W. K. Sanders.....	West Newton, Mass.	
1.*W. A. Scott, B.A.Sc., D.L.S.,	Dominion Land Surveyor. Galt, Ont.	
1.*W. M. Stewart, B.A.Sc.....	Toronto, Ont.	
2. J. E. Thomson, B.A.Sc.....	With Sterling Coal Co. W. Virginia, U.S.A.	
3.*C. L. Vickery	Chief Engineer, American 112 Barlow St. Fall River, Mass.	Thread Co.
5. W. E. Wickett (deceased).		
3.*J. N. Wilson, B.A.Sc.....	Electrical Dept., Toronto, Ont.	City of Toronto.
3.*E. M. Wood, B.A.Sc.....	Toronto, Ont.	

1907.

3.*F. G. Allen, B.A.Sc.....	With Burke Electric Co. Erie, Pa.	
1. F. J. Anderson, B.A.S.....	Niagara Falls, Ont.	
1. A. P. Augustine.....	B.C. Land Surveyor. Vancouver, B.C.	
3.*H. D. Bowman, B.A.Sc	With the Ontario Power Co. Niagara Falls, Ont.	
3. W. S. Brady, B.A.Sc.....	With Westinghouse Electric and Pittsburgh, Pa.	Mfg. Co.

*Diploma with honours.

1907—Continued.

Course.	Name and address.	Occupation.
1. G. H. Broughton.....	Paris Ont.	
1. J. A. Brown, B.A.Sc.....	Toronto, Ont.	
1. C. E. Bush, B.A.Sc.....	Toronto, Ont.	Fellow in Surveying, University of Toronto.
3. J. H. Caster	Peterboro', Ont.	Student in Testing Dept., Can. Gen. Elec. Co.
1.*E. Cavell	Saskatoon, Sask.	Wiggins & Cavell, Surveyors and Engineers.
1.*C. B. B. Connell.....	Glasgow, Scotland.	With Mirrless & Watson.
3.*G. C. Cowper, B.A.Sc.....	Toronto, Ont.	
2. J. V. Culbert, B.A.Sc.....	Toronto, Ont.	
3.*R. S. Davis, B.A.Sc.....	Calgary, Alta.	Sales Engineer, Canadian Westinghouse Co.
3. S. D. Evans, B.A.Sc.....	Leamington, Ont.	
3.*F. R. Ewart, B.A.Sc.....	Toronto, Ont.	
1. G. R. S. Fleming.....	Toronto, Ont.	With Atwell Fleming Printing Co.
6. P. C. Fux, B.A.Sc.....	Brantford, Ont.	With Waterous Engine Works Co.
1. J. S. Galletly.....	Brooklyn, Ont.	
2. G. Galt, B.A.Sc.....	East Ely, Nevada.	With Nevada Co.
1. A. B. Garrow, B.A.Sc.....	Toronto, Ont.	Staff of City Engineer.
1. A. Gillies, B.A.Sc.....	Cobalt, Ont.	Resident Engineer, Beach's Camp.
1. G. W. Graham.....	Eugenia, Ont.	
3. C. S. Grasett, B.A.Sc.....	Barrie, Ont.	
1.*R. E. W. Hagarty, B.A.Sc...	Toronto, Ont.	Demonstrator in Drawing, University of Toronto.

*Diploma with honours.

1907—*Continued.*

Occupation.	Course.	Name and address.
3. K. Hall, B.A.Sc.....		Toronto, Ont.
1. Hamilton, C. T., B.A.Sc	With Ontario Power Co.	Niagara Falls, Ont.
3. R. A. Hare.....		
3.*H. O. Hill, B.A.Sc.....	With Riter-Conley Mfg. Co.	Pittsburgh, Pa.
1.*T. H. Hogg, B.A.Sc.....	Asst. to Supt. of Construction,	Niagara Falls, Ont. Ontario Power Co.
3.*C. H. Hutton, B.A.Sc.....	Engineering Staff, Dominion	Hamilton, Ont. Power Co.
1. H. M. Hyland, B.A.Sc.....	Fellow in Drawing,	Toronto, Ont. University of Toronto.
3. E. W. Hyman, B.A.Sc.....	Asst. Superintendent, London	Toronto, Ont. Electric Co.
3.*L. G. Ireland, B.A.Sc.....	Construction Engineer, with	Toronto, Ont. Smith, Kerry and Chace.
1.*W. Jackson, B.A.Sc	With Ontario Power Co.	Niagara Falls, Ont.
4.*C. B. Jackson	Estimating Dept., E. Everett	Chicago, Ill. Clora Co.
3.*E. W. Kay, B.A.Sc.....	Salesman, Canadian Westing-	Hamilton, Ont. house Co.
3. D. F. Keith	Electrical Engineer, Telluride	Provo, Utah. Power Co.
1. H. P. Keith	Fellow in Drawing,	Toronto, Ont. University of Toronto.
1. A. A. Kinghorn, B.A.Sc.....	Demonstrator in Physics,	Toronto, Ont. University of Toronto.
1. L. W. Klingner.....		Coldwater, Ont.
1.*F. C. Lamb, B.A.Sc.....		Toronto, Ont.
3. A. D. LePan, B.A.Sc.....	Assistant Superintendent of	Toronto, Ont. Buildings and Grounds, University of Toronto.
1. J. H. Lindsay		Hornby, Ont.
3. J. A. D. McCurdy.....	With Graham Bell, Esq.	Baddeck, N.S.

*Diploma with honours.

1907—*Continued.*

Course.	Name and address.	Occupation.
1.*J. B. McFarlane, B.A.Sc.....	Dominion Land Surveyor. 60 Lonsdale Rd., Toronto, Ont.	
3.*D. J. McGugan,, B.A.Sc.....	With Humphreys & Tupper, Civil Vancouver, B.C.	Engineers and Surveyors.
3. A. H. McIntosh	With Illinois Steel Co. Chicago, Ill.	
3. F. W. McNeil, B.A.Sc.....	Canadian General Electric Co. Peterboro', Ont.	
1.*M. K. McQuarrie	Asst. Engineer, C.P. Ry. Co. Vancouver, B.C.	
1.*G. MacLeod	Assistant Secretary, Can. Soc. C.E. Montreal, P.Q.	
1. A. G. Mackay	With The Hudson Terminal Co. New York, N.Y.	
1. W. S. Malcolmson, B.A.Sc....	Routly, Summers & Malcolmson, Haileybury, Ont.	Engineers and Surveyors.
3. S. A. Marshall	With The Hamilton Bridge Works Hamilton, Ont.	Co.
6. D. H. C. Mason, B.A.Sc.....	Toronto, Ont.	
1. J. W. Melson, B.A.Sc.....	Toronto, Ont.	
1. G. G. Mills, B.A.Sc.....	Toronto, Ont.	
3. J. B. Minns, B.A.Sc.....	Canadian General Electric Co. Peterboro' Ont.	
4.*G. N. Molesworth	Draftsman, Eden Smith & Son, Toronto, Ont.	Architects.
1. J. M. Moore, B.A.Sc.....	With McClary Mfg. Co. London, Ont.	
5.*P. F. Morley	Toronto, Ont.	
1. E. W. Murray	Engineer, with Edge & Gutteridge, Stratford, Ont.	Contractors and Builders.
3. J. D. Murray	With Fetherstonhaugh & Co., Toronto, Ont.	Patent Solicitors and Engi- neers.
1. E. W. Neelands, B.A.Sc.....	Sutcliffe & Neelands, New Liskeard, Ont.	Consulting Engineers.

*Diploma with honours.

1907—*Continued.*

Course.	Name and address.	Occupation.
1. R. E. K. Neelands.....	Fellow in Drawing, Toronto, Ont.	University of Toronto.
2.*B. Neilly, B.A.Sc.....	Assayer, Silver Queen Mine. Cobalt, Ont.	
1. A. E. Nourse, B.A.Sc.....	Asst. Engineer, Expanded Toronto, Ont.	Metal Co.
3. J. J. O'Sullivan	With Canada Railway News Co. Toronto, Ont.	
2. T. K. Paton.....	Mining Engineer. Wardner, Ida.	
1. F. W. Paulin, O.L.S.....	Civil Engineer. Niagara Falls, Ont.	
1. R. B. Potter	Fellow in Physics, Toronto, Ont.	University of Toronto.
3.*F. E. Prochnow.....	With Wilhelm, Parker & Ward, Buffalo, N.Y.	Patent Attorneys.
3.*J. F. Procunier.....	Bayham, Ont.	
3. G. E. Quance, B.A.Sc.....	Delhi, Ont.	
3.*H. Raine	With Hamilton Bridge Works Co. Hamilton, Ont.	
1.*J. L. Rannie.....	Dominion Observatory. Ottawa, Ont.	
3. C. W. B. Richardson, B.A.Sc..	Motive Power Dept., Angus Shops. Montreal, Que.	
1. A. A. Ridler.....	City Engineer's Dept. Toronto, Ont.	
5. H. E. Rothwell.....	Asst. Chemist, Standard Varnish Staten Island, N.Y.	Works.
5. C. A. Schofield.....	Chemist, Niagara Frontier Buffalo, N.Y.	Laboratory.
1.*A. C. T. Sheppard.....	Dept. of Mines. Ottawa, Ont.	
1. F. R. Smith, B.A.....	Manager, Can. Gowganda Silver Gowganda, Ont.	Mines.
3. E. R. Smithrim, B.A.Sc.....	With Tagona Water and Light Co. Sault Ste, Marie, Ont.	
1.*W. Snaith	Fellow in Drawing, Toronto, Ont.	University of Toronto.

*Diploma with honours.

1907—*Continued.*

Course.	Name and address.	Occupation.
3.*A. C. Spencer, B.A.Sc.....	Mechanical Engineer, McClary London, Ont.	Mfg. Co.
3. G. S. Stewart.....	Agent, Canadian General Elec. Toronto, Ont.	Co.
1. J. A. Stiles, B.A.Sc.....	City Engineer's Office, Bridge Dept. Toronto, Ont.	
3.*J. L. Stiver.....	Electrical Standards Laboratory, Ottawa, Ont.	Inland Revenue Dept.
1. J. L. G. Stuart.....	Post-Graduate Course in Engineer- Toronto, Ont.	ing, University of Toronto.
1. G. F. Summers, O.L.S.	Routly, Summers & Malcolmson, Haileybury, Ont.	Engineers & Surveyors.
1.*H. W. Sutcliffe.....	Sutcliffe & Neelands, New Liskeard, Ont.	Consulting Engineers.
1. P. M. Thompson, B.A.Sc.	Draftsman, American Bridge Co. Ambridge, Pa.	
3. O. R. Thomson, B.A.Sc.....	Inspector, Hydro-Electric Power Berlin, Ont.	Comm
1. L. R. Thomson, B.A.Sc.....	Demonstrator in Drawing, Toronto, Ont.	University of Toronto.
1. W. J. Walker	With Transcontinental Ry. Nipigon, Ont.	
1. E. D. Wilkes, B.A.Sc.....	Main Drainage Dept., City Hall. Toronto, Ont.	
3. A. F. Wilson, B.A.Sc.....	Inspector, Chicago Telephone Co. Chicago, Ill.	
3. M. H. Woods.....	Fellow in Drawing, Toronto, Ont.	University of Toronto.
1. G. W. A. Wright.....	Warren Bituminous Paving Co.	
3.*A. R. Zimmer.....	Demonstrator in Electrical En- Toronto, Ont.	gineering, University of Toronto.

1908.

3. H. G. Akers	Fellow in Electrochemistry, Toronto, Ont.	University of Toronto.
3. L. F. Allan.....		
	Toronto, Ont.	
1.*C. B. Allison.....		
	South Woodslee, Ont.	

*Diploma with honours.

1908—*Continued.*

Course.	Name and address.	Occupation.
1.*R. M. Anderson	Toronto, Ont.	Post-Graduate Course in Engineering, University of Toronto.
5. J. R. Arens	Orillia, Ont.	
3. H. C. Barber.....	Toronto, Ont.	Electrical Department, City of Toronto.
1. E. Bartlett	Toronto, Ont.	Post-Graduate Course in Engineering, University of Toronto.
2. F. J. Bedford	Sudbury, Ont.	Supt., Crean Hill Mine, Can. Copper Co.
1.*G. G. Bell.....	Walkerville, Ont.	Canadian Bridge Co.
3. G. E. Black.....	Toronto, Ont.	Post-Graduate Course in Engineering, University of Toronto.
3. H. F. Bowes	Toronto, Ont.	Supt. of Warren Bituminous Paving Co.
3.*J. H. Brace.....	Brooklyn, N.Y.	With N.Y. Telephone Co.
1. P. R. Brecken, B.A.Sc.....	Toronto, Ont.	General Secretary, Y.M.C.A., University of Toronto.
3. E. I. Brown.....	Nipissing, Ont.	Asst. Eng. on Const., Can. Westinghouse Co., Nipissing Power Co.
1. W. F. M. Bryce.....	Ottawa, Ont.	Asst. Engineer, City Engineer's Dept.
3. P. H. Buchan, B.A.Sc.....	Vancouver, B.C.	Engineering Dept., B.C. Electric Ry. Co.
2. J. E. Campbell.....	Toronto, Ont.	Post-Graduate Course in Engineering, University of Toronto.
3. N. A. Campbell	Calgary, Alta.	Chief Chemist, Canada Cement Co.
3. A. M. Carroll.....	Cobalt, Ont.	Manager, Rochester Cobalt-Mines.
1. H. R. Carscallen, B.A.Sc.....	Calgary, Alta.	Asst. Hydrographer, with P. M. Sander.
3. G. Challen	Simcoe, Ont.	
1. F. H. Chesnut, B.A.Sc.....	Toronto, Ont.	Engineer in charge, Ont. Board of Health Experimental Plant.
1. W. E. Cole (deceased).		

*Diploma with honours.

1908—*Continued.*

- | *Diploma with honours. | Occupation. |
|-------------------------------|--|
| 4.*W. C. Collett, B.A.Sc..... | Draftsman, F. S. Baker,
Toronto, Ont. Confederation Life Bldg. |
| 1. R. Y. Cory, B.A.Sc..... | Toronto, Ont. |
| 3.*H. Coyne, B.A.Sc..... | Designing Draftsman.
19 E. Monroe St.
Chicago, Ill. |
| 2.*J. D. Cumming | Post-Graduate Course in Engineer-
Toronto, Ont. ing, University of Toronto. |
| 6. A. D. Dahl, B.A.Sc..... | Chemist, John Taylor Co.
Toronto, Ont. |
| 1. F. A. Danks..... | |
| 3. J. Darroch | Draftsman, Autoparts Mfg. Co.
Detroit, Mich. |
| 3. Doorly, H. C..... | Schenectady, N.Y. |
| 2. Douglas, R. H. | Dept. of Public Works.
Edmonton, Alta. |
| 2.*F. C. Dyer, B.A.Sc..... | Demonstrator in Mining,
Toronto, Ont. University of Toronto. |
| 1. F. M. Eagleson | Haileybury, Ont. |
| 1. C. Edwards, B.A.Sc..... | With Standard Sanitary Mfg. Co.
Toronto, Ont. |
| 1. S. L. Evans | Post-Graduate Course in Engineer-
Toronto, Ont. ing, University of Toronto. |
| 1. E. O. Ewing, | |
| 1. O. L. Flanagan..... | Post-Graduate Course in Engineer-
Toronto, Ont. ing, University of Toronto. |
| 1. C. Flint | Post-Graduate Course in Engineer-
Toronto, Ont. ing, University of Toronto. |
| 1. A. H. Foster, B.A.Sc..... | With Transcontinental Ry.
Cochrane, Ont. |
| 3. G. C. Francis..... | City Engineer's Staff,
Toronto, Ont. Roadway's Dept. |
| 3. S. S. Gear..... | Toronto, Ont. |
| 1. C. A. Grassie..... | Post-Graduate Course in Engineer-
Toronto, Ont. ing, University of Toronto. |

*Diploma with honours.

1908—*Continued.*

Course.	Name and address.	Occupation.
Course.	Name and address.	Occupation.
3.*C. L. Gulley, B.A.Sc.....	Demonstrator in Electrical En- gineering, University of Toronto, Ont.	Toronto.
3. J. W. Hackner, B.A.Sc.....	Inspector of Public Works. Nairn Centre, Ont.	
3. F. L. Haviland.....	Draftsman, Hamilton Bridge Hamilton, Ont.	Works Co.
1.*C. D. Henderson.....	Canadian Bridge Co. Walkerville, Ont.	
5.*D. J. Huether, B.A.Sc.....	Toronto, Ont.	
1. A. D. Huether, B.A.Sc.....	Toronto, Ont.	
3.*A. N. Hunter, B.A.Sc.....	Fellow in Electrical Engineering, Toronto, Ont.	University of Toronto.
3. S. B. Iler	With Canadian General Electric Peterboro', Ont.	Co.
1.*J. T. Johnston.....	Post-Graduate Course in Engineer- ing, University of Toronto.	
1.*W. R. Keys	Winchester, Ont.	
3.*J. N. M. Leslie, B.A.Sc.....	Fellow in Electrical Engineering, Toronto, Ont.	University of Toronto.
3. F. C. Lewis.....	Ingersoll, Ont.	
3. H. R. Lynar	Asst. to H. J. Glaubitz, C.E., Toronto, Ont.	Consulting Engineer.
1.*W. G. McGeorge.....	Consulting Engineer. Chatham, Ont.	
1. J. M. McGregor.....	Ridgetown, Ont.	
1. L. A. McLean, B.A.Sc., (de- ceased).		
1. W. A. A. McMaster.....	Palmerston, Ont.	
1. H. C. McMordie, B.A.Sc.....	Toronto, Ont.	
1.*A. A. McRoberts, B.A.Sc.....	Assistant on Dominion Land Pontypool, Ont.	Survey.

*Diploma with honours.

1908—*Continued.*

Course.	Name and address.	Occupation.
5.*N. G. Madge.....	Toronto, Ont.	Fellow in Chemistry, University of Toronto.
3. J. E. Malone.....	Chicago, Ill.	With Illinois Steel Co.
5. K. D. Marlatt.....	London, Eng.	Student, Leathersellers Co's. Technical College.
1. R. J. Marshall, B.A.Sc.....	Toronto, Ont.	Demonstrator in Applied Mechan- ics, University of Toronto.
5. G. L. Milligan.....	Brampton, Ont.	
1. A. B. Mitchell.....	Toronto, Ont.	Fellow in Drawing. University of Toronto.
4.*J. C. P. Molesworth (deceased).		
3. E. D. Monk, B.A.Sc.....	Pittsfield, Mass.	Testing Dept., General Elec. Co.
3.*F. H. Moody, B.A.Sc.....	Toronto, Ont.	Demonstrator in Thermodynamics, University of Toronto.
3. J. H. Morice, B.A.Sc.....	Pittsfield, Mass.	Testing Dept., General Electric Co.
3. F. E. H. Mowbray, B.A.Sc...	Hamilton, Ont.	Canadian Westinghouse Co.
3.*W. P. Murray, B.A.Sc.....	Lachine, Que.	Dominion Bridge Co.
3. W. deC. O'Grady.....	Winnipeg, Man.	Engineer, Gas Traction Co., Ltd.
1. H. J. Peckover, B.A.Sc.....	Toronto, Ont.	Fellow in Drawing.
1.*M. Pequegnat, B.A.Sc.....	Toronto, Ont.	Demonstrator in Drawing, University of Toronto.
1. H. G. Phillips.....	Saskatoon, Sask.	Phillips & Phillips, Civil Engineers and Surveyors.
3. M. Pivnick	Toronto, Ont.	
1.*E. M. Proctor, B.A.Sc.....	Toronto, Ont.	Draftsman, Canada Foundry Co.
3.*C. F. Publow, B.A.Sc.....	Toronto, Ont.	
1. J. T. Ransom, B.A.Sc.....	Toronto, Ont.	

*Diploma with honours.

1908—*Continued.*

Course.	Name and address.	Occupation.
1.*W. B. Redfern, B.A.Sc.....	Resident Engineer for Willis Orillia, Ont.	Chipman, C.E.
1. F. L. Richardson.....	Post-Graduate Course in Engineer- Toronto, Ont.	ing, University of Toronto.
3. H. A. Ricker,	Toronto, Ont.	
1. A. R. Robertson, B.A.Sc.....	Staff of City Engineer. Toronto, Ont.	
5. F. A. Robertson.....	Student in Chemistry, Faculty of Toronto, Ont.	Applied Science.
1.*W. A. Robinson.....	Winnipeg, Man.	
3. R. C. Robinson.....	Winnipeg, Man.	
5. L. J. Rogers.....	Fellow in Chemistry, Toronto, Ont.	University of Toronto.
2.*R. R. Rose, B.A.Sc.....	Toronto, Ont.	
3. D. Ross	London, Ont.	
3. J. St. Lawrence.....	American Clay Machinery Co. Willoughby, O.	
1. A. O. Secord.....	Brantford, Ont.	
3. W. E. V. Shaw, B.A.Sc.....	With Hydro-Electric Power Toronto, Ont.	Comm.
3. H. F. Shearer, B.A.Sc.....	Toronto, Ont.	
1. W. L. Stamford, B.A.Sc.....	Inspector on Concrete Work, Point du Bois, Man.	Hydro-Electric Power Plant.
3. R. H. Starr, B.A.Sc.....	Electrician, Toronto St. Railway Toronto, Ont.	Co.
3. A. W. J. Stewart.....	With Smith, Kerry and Chace. Toronto, Ont.	
1. J. J. Stock	Toronto, Ont.	
1. H. B. Stuart, B.A.Sc.....	Draftsman, Hamilton Bridge Hamilton, Ont.	Works Co.
2. J. L. G. Stuart.....	Post-Graduate Course in Engineer- Toronto, Ont.	ing, University of Toronto.

*Diploma with honours.

1908—*Continued.*

Course.	Name and address.	Occupation.
3. A. D. Sword.....	Toronto, Ont.	
3. J. W. R. Taylor.....	Toronto, Ont.	Post-Graduate Course in Engineering, University of Toronto.
1.*W. E. Taylor.....	Toronto, Ont.	Post-Graduate Course in Engineering, University of Toronto.
3. V. C. Thomas, B.A.Sc.....	Toronto, Ont.	Demonstrator in Hydraulics, University of Toronto.
1. J. H. Thornley, B.A.Sc.....	New Ontario.	With W. E. Sedgeworth, M.E.
1. C. G. Toms.....	Toronto, Ont.	Post-Graduate Course in Engineering, University of Toronto.
1. H. W. Tye.....	Winnipeg, Man.	Construction Dept., C.P.R.
3. C. P. VanNorman.....	Toronto, Ont.	With Canadian Westinghouse Co.
1. T. L. Villeneuve.....	Chicoutimi, Que.	Asst. Engineer, Dept. of Public Works.
1. J. A. Walker.....	Toronto, Ont.	Post-Graduate Course in Engineering, University of Toronto.
3.*B. W. Waugh.....	Berlin, Ont.	
3. R. M. Wedlake, B.A.Sc.....	Toronto, Ont.	
3. R. P. Weir.....	Toronto, Ont.	With C. H. Mitchell, Consulting Engineer.
1. A. M. West.....	Toronto, Ont.	Post-Graduate Course in Engineering, University of Toronto.
1. W. R. White	Drayton, Ont.	
3. W. J. White, B.A.Sc.....		
3.*F. D. Wilson	Toronto, Ont.	Draftsman, McGregor & McIntyre, Ltd.
1. J. M. Wilson	Moose Jaw, Sask.	City Engineer.
1. D. O. Wing	Prince Rupert, B.C.	With G.T.P. Co.
3.*R. Young	Vancouver, B.C.	Foreman, Vancouver Power Co.

*Diploma with honours.

1909.

Course.	Name and address.	Occupation.
3. E. G. Arens.....	With The E. Long Mfg. Co., Ltd. Orillia, Ont.	
3. H. V. Armstrong.....	Engineering Staff of Willis Toronto, Ont.	Chipman, C.E.
2.*E. T. Austin.....	With J. M. Guffey Petroleum Co. Beaumont, Texas	
3. W. H. Barry.....	Post-Graduate Course in Engineer- Toronto, Ont.	ing, University of Toronto.
3. R. D. S. Beckstedt	Post-Graduate Course in Engineer- Toronto, Ont.	ing, University of Toronto.
3. R. E. Beith	With Transcontinental Ry. Cochrane, Ont.	
1.*G. A. Bennett	Post-Graduate Course in Engineer- Toronto, Ont.	ing, University of Toronto.
3. E. R. Birchard.....	Post-Graduate Course in Engineer- Toronto, Ont.	ing, University of Toronto.
3. W. D. Black.....	Post-Graduate Course in Engineer- Toronto, Ont.	ing, University of Toronto.
3. D. C. Blizard.....		
1.*W. J. Boulton.....		
3. G. H. Bowen.....	Post-Graduate Course in Engineer- Toronto, Ont.	ing, University of Toronto.
3. C. E. Brown.....	Post-Graduate Course in Engineer- Toronto, Ont.	ing, University of Toronto.
1. E. W. Browne.....	Post-Graduate Course in Engineer- Toronto, Ont.	ing, University of Toronto.
1. J. A. Buchanan		
3. J. E. Burns.....	Post-Graduate Course in Engineer- Toronto, Ont.	ing, University of Toronto.
1. M. G. Cameron.....	Post-Graduate Course in Engineer- Toronto, Ont.	ing, University of Toronto.
3.*R. A. Campbell		
1. V. S. Chesnut.....	Engineering Staff, Canadian Atherley, Ont.	Northern Ontario Ry.
1.*C. G. Cline.....	Foreman on Construction, Hydro- Ruskin, B.C.	Electric Power Plant.
1. J. G. Collinson.....	Post-Graduate Course in Engineer- Toronto, Ont.	ing, University of Toronto.
1. G. W. Coltham.....	Post-Graduate Course in Engineer- Toronto, Ont.	ing, University of Toronto.

*Diploma with honours.

1909—*Continued.*

Course.	Name and address.	Occupation.
3.*H. A. Cooch.....	Toronto, Ont.	Post-Graduate Course in Engineering, University of Toronto.
3. W. E. Corman		
3. T. H. Crosby.....	Vancouver, B.C.	Engineering Dept., B.C. Electric Ry. Co.
3. R. H. Cunningham.....	Toronto, Ont.	Post-Graduate Course in Engineering, University of Toronto.
1.*F. A. Dallyn	Toronto, Ont.	Post-Graduate Course in Engineering, University of Toronto.
3. C. N. Danks.....	Sherbrooke, Que.	Draftsman, Canadian Rand Co., Ltd.
1. E. M. Dann.....		
3. H. W. Davis.....	Kingston, Ont.	With A. Davis & Son, Ltd., Leather Manufacturers.
2.*A. I. Davis	Toronto, Ont.	Post-Graduate Course in Engineering, University of Toronto.
1. H. C. Davis.....		
1. I. H. Dawson.....	St. Catharines, Ont.	Draftsman.
Course.	Name and address.	Occupation.
3. W. H. Delahaye.....	Toronto, Ont.	Post-Graduate Course in Engineering, University of Toronto.
3. W. P. Derham.....	Toronto, Ont.	Post-Graduate Course in Engineering, University of Toronto.
5.*W. A. Dodds.....	Toronto, Ont.	Post-Graduate Course in Engineering, University of Toronto.
1. R. H. Douglas.....	Edmonton, Alta.	Dept. of Public Works.
1. F. S. Falconer.....	Toronto, Ont.	Post-Graduate Course in Engineering, University of Toronto.
3. T. A. Fargey.....	Toronto, Ont.	Post-Graduate Course in Engineering, University of Toronto.
1. J. B. Ferguson.....	Toronto, Ont.	Post-Graduate Course in Engineering, University of Toronto.
3. A. T. Fergusson.....	Toronto, Ont.	Post-Graduate Course in Engineering, University of Toronto.
3. T. E. Freeman.....	Toronto, Ont.	Post-Graduate Course in Engineering, University of Toronto.
3. E. R. Frost.....	Toronto, Ont.	Post-Graduate Course in Engineering, University of Toronto.

*Diploma with honours.

1909—*Continued.*

Course.	Name and address.	Occupation.
1. A. E. Glover.....		
5. A. E. Gooderham.....	Toronto, Ont.	
1. D. A. Graham.....	Post-Graduate Course in Engineer- Toronto, Ont. ing, University of Toronto.	
2. R. R. Grant.....		
1. J. E. Gray	Draftsman, Canadian Bridge Co. Walkerville, Ont.	
1. G. E. D. Greene.....	Post-Graduate Course in Engineer- Toronto, Ont. ing, University of Toronto.	
1. W. H. Greene.....		
1. W. W. Gunn.....	Post-Graduate Course in Engineer- Toronto, Ont. ing, University of Toronto.	
3. C. J. Harper.....		
1. D. W. Harvey.....	Post-Graduate Course in Engineer- Toronto, Ont. ing, University of Toronto.	
1. C. O. Hay.....	Lumberman.* Falkenburg, Ont.	
3.*J. Hemphill		
1.*G. Hogarth	Engineer's Office, Dept. of Public Toronto, Ont. Works of Ontario.	
3. A. E. Holmes.....	Post-Graduate Course in Engineer- Toronto, Ont. ing, University of Toronto.	
3. C. R. Holmes		
1. G. C. Hoshal.....	Post-Graduate Course in Engineer- Toronto, Ont. ing, University of Toronto.	
3. C. Hughes	Post-Graduate Course in Engineer- Toronto, Ont. ing, University of Toronto.	
1. A. E. Hunter.....	Post-Graduate Course in Engineer- Toronto, Ont. ing, University of Toronto.	
3.*H. Irwin	Post-Graduate Course in Engineer- Toronto, Ont. ing, University of Toronto.	
3. J. Isbister	Post-Graduate Course in Engineer- Toronto, Ont. ing, University of Toronto.	
3. F. P. Jackes.....	Post-Graduate Course in Engineer- Toronto, Ont. ing, University of Toronto.	
1.*J. E. Jackson.....		
1. E. W. James	Post-Graduate Course in Engineer- Toronto, Ont. ing, University of Toronto.	

*Diploma with honours.

1909—*Continued.*

Course.	Name and address.
1.*C. C. Johnson.....	Post-Graduate Course in Engineering, University of Toronto. Toronto, Ont.
1. C. E. Johnston.....	Post-Graduate Course in Engineering, University of Toronto. Toronto, Ont.
1. W. J. Johnston.....	
1.*A. H. E. Keffer.....	With T. & N. O. Ry. North Bay, Ont.
3. J. B. O. Kemp.....	Post-Graduate Course in Engineering, University of Toronto. Toronto, Ont.
3. W. R. Key.....	Post-Graduate Course in Engineering, University of Toronto. Toronto, Ont.
5. H. N. Klotz.....	Post-Graduate Course in Engineering, University of Toronto. Toronto, Ont.
3. A. W. Lamont.....	Post-Graduate Course in Engineering, University of Toronto. Toronto, Ont.
3.*C. B. Langmuir.....	Post-Graduate Course in Engineering, University of Toronto. Toronto, Ont.
3. A. E. Lennox.....	Post-Graduate Course in Engineering, University of Toronto. Toronto, Ont.
1.*R. W. E. Loucks.....	Mining and Prospecting. Delisle, Sask.
3. E. D. Macfarlane.....	Post-Graduate Course in Engineering, University of Toronto. Toronto, Ont.
1. J. G. Mackinnon.....	Fellow in Drawing, Toronto, Ont. University of Toronto.
1. W. A. MacLachlan.....	
3. B. A. Maclean.....	Post-Graduate Course in Engineering, University of Toronto. Toronto, Ont.
1. N. W. Macpherson.....	Post-Graduate Course in Engineering, University of Toronto. Toronto, Ont.
1. A. S. McArthur.....	Post-Graduate Course in Engineering, University of Toronto. Toronto, Ont.
3. C. R. McCollum.....	Post-Graduate Course in Engineering, University of Toronto. Toronto, Ont.
3.*A. S. McCordick.....	Draftsman, Electrical Dept., City Hall. Toronto, Ont.
3. P. J. McCuaig.....	Post-Graduate Course in Engineering, University of Toronto. Toronto, Ont.
1. F. H. McKechnie.....	Engineering Staff, Trans. Ry. Cochrane, Ont.

*Diploma with honours.

1909—*Continued.*

Course.	Name and address.	Occupation.
3. G. McLeod	Electrician. Waupaca, Wis.	
1. V. McMillan	Post-Graduate Course in Engineer- Toronto, Ont. ing, University of Toronto.	
3. N. H. Manning.....	Post-Graduate Course in Engineer- Toronto, Ont. ing, University of Toronto.	
1.*A. B. Manson.....	Post-Graduate Course in Engineer- Toronto, Ont. ing, University of Toronto.	
1.*E. S. Martindale.....	Kingsmill, Ont.	
1. O. W. Martyn.....	Engineering Work for Beardmore Acton West, Ont. & Co.	
2. C. A. Morris.....	Post-Graduate Course in Engineer- Toronto, Ont. ing, University of Toronto.	
3. G. Morton	Post-Graduate Course in Engineer- Toronto, Ont. ing, University of Toronto.	
1.*F. V. Munro.....	Post-Graduate Course in Engineer- Toronto, Ont. ing, University of Toronto.	
1. E. A. Neville.....		
1. J. Newton	Post-Graduate Course in Engineer- Toronto, Ont. ing, University of Toronto.	
3.*L. S. Odell.....	Fellow in Drawing, Toronto, Ont. University of Toronto.	
3. V. J. O'Donnell.....	Toronto, Ont.	
3. J. J. O'Hearn.....	Post-Graduate Course in Engineer- Toronto, Ont. ing, University of Toronto.	
1. A. W. Pae.....	District Hydrographer. Calgary, Alta.	
1.*A. M. Petry.....	Post-Graduate Course in Engineer- Toronto, Ont. ing, University of Toronto.	
1. R. B. Pigott.....		
2. G. M. Ponton.....	With West Canadian Collieries Co. Blairmore, Alta.	
3.*C. J. Porter.....	Post-Graduate Course in Engineer- Toronto, Ont. ing, University of Toronto.	
3. A. I. Proctor.....		
1. J. Quail		
1. A. F. Ramsperger.....	Draftsman, With Toronto Iron Toronto, Ont. Works Ltd.	

*Diploma with honours.

1909—*Continued.*

Course.	Name and address.
1.*C. R. Redfern.....	Post-Graduate Course in Engineering, University of Toronto. Toronto, Ont.
3.*L. T. Rutledge.....	Post-Graduate Course in Engineering, University of Toronto. Toronto, Ont.
1. A. U. Sanderson.....	Post-Graduate Course in Engineering, University of Toronto. Toronto, Ont.
3.*R. A. Sara.....	Hydro-Electric System, City Hall. Toronto, Ont.
3.*A. Schlarbaum	Construction Engineer, Smith, Campbellford, Ont. Kerry & Chace.
3.*C. Schwenger	Post-Graduate Course in Engineering, University of Toronto. Toronto, Ont.
1. C. A. Scott.....	Roadway Dept., City Hall. Toronto, Ont.
1. A. Sedgwick	Engineer, Dog Lake Storage Kaministiquia, Ont. Works.
1. B. H. Segré	
1. F. V. Seibert.....	Asst. to Dominion Land Surveyor. Southampton, Ont.
5. M. R. Shaw.....	Chemist, Dow Chemical Co. Midland, Mich.
3. M. W. Sparling.....	Electrician, Canadian Copper Co. Coppercliff, Ont.
1. D. S. Stayner	Post-Graduate Course in Engineering, University of Toronto. Toronto, Ont.
1.*N. C. Stewart.....	
	Nelson, B.C.
1.*P. H. Stock.....	Post-Graduate Course in Engineering, University of Toronto. Toronto, Ont.
1. J. C. Street.....	
3. S. Stroud	Post-Graduate Course in Engineering, University of Toronto. Toronto, Ont.
1. C. C. Sutherland.....	Staff of City Engineer. Edmonton, Alta.
1. R. G. Swan.....	Post-Graduate Course in Engineering, University of Toronto. Toronto, Ont.
1. A. D. Sword.....	
1.*H. W. Tate.....	Post-Graduate Course in Engineering, University of Toronto. Toronto, Ont.

*Diploma with honours.

1909—*Continued.*

Course.	Name and address.
3.*E. A. Thompson.....	Post-Graduate Course in Engineer- Toronto, Ont. ing, University of Toronto.
1. G. A. Tipper.....	Post-Graduate Course in Engineer- Toronto, Ont. ing, University of Toronto.
3. A. G. Trees.....	Post-Graduate Course in Engineer- Toronto, Ont. ing, University of Toronto.
3. W. G. Turnbull.....	Post-Graduate Course in Engineer- Toronto, Ont. ing, University of Toronto.
1. J. E. Underwood.....	
1. C. P. VanNorman.....	With Canadian Westinghouse Co. Toronto, Ont.
1. J. VanNostrand	Student. Toronto, Ont.
1. A. Vatcher	Post-Graduate Course in Engineer- Toronto, Ont. ing, University of Toronto.
1. C. M. Walker.....	Surveying. Toronto, Ont.
1. E. E. Webb	
1. C. E. Webb.....	Post-Graduate Course in Engineer- Toronto, Ont. ing, University of Toronto.
3. F. C. White.....	
3. A. R. Whitelaw.....	
1. R. G. Wilkinson.....	Post-Graduate Course in Engineer- Toronto, Ont. ing, University of Toronto.
5.*J. A. McK. Williams.....	Post-Graduate Course in Engineer- Toronto, Ont. ing, University of Toronto.
1.*O. T. G. Williamson.....	Post-Graduate Course in Engineer- Toronto, Ont. ing, University of Toronto.
3. L. R. Wilson.....	Draftsman, Dominion Bridge Co. Lachine Locks, P.Q.
3. F. F. Wilson.....	Post-Graduate Course in Engineer- Toronto, Ont. ing, University of Toronto.
2. S. A. Wookey.....	

*Diploma with honours.

CERTIFICATES.

MINERALOGY AND ASSAYING.

Date.	Name and address.
1896. G. Johnston	
1896. A. T. Tye.....	c/o Empresa Hanséatica, Barran quilla, Columbia, S. America.
1897. E. B. Webster.....	
1898. A. N. McMillan.....	Penetanguishene, Ont.
1900. A. H. Smith.....	Supt., Los Reyes Gold Mining and Milling Co., Oaxaca, Mexico.
1901. G. A. Hunt.....	

ELECTRICITY.

1896. E. I. Sifton.....	Manager, London Electric Con- struction Co., London Ont.
1903. W. Elwell, (deceased).	

INDEX TO GRADUATES.

In the following alphabetical list of the Graduates is given the year of graduation of each student. In the preceding list, which is arranged by classes in the order of graduation, may be found additional information as to occupation, addresses, etc.

A.

Acres, H. G.....	1903	Angus, H. H.....	1903
Akers, H. G.....	1908	Angus, R. W.....	1894
Alexander, J. H.....	1904	Apsey, J. F.....	1888
Alison, T. H.....	1892	Ardagh, A. G.....	1893
Alison, J. G. R.....	1903	Ardagh, E. G. R.....	1900
Allan, J. R.....	1892	Arens, H. W. (deceased)...	1905
Allan, J. L.....	1900	Arens, J. R.....	1908
Allan, L. F.....	1908	Arens, E. G.....	1909
Allen, F. G.....	1907	Armer, J. C.....	1906
Allison, C. B.....	1908	Armour, R. H.....	1905
Alport, F.	1906	Armstrong, J.	1895
Amos, W. L.....	1906	Armstrong, H. V.....	1909
Anderson, A. G.....	1892	Ashbridge, W. T.....	1888
Anderson, F. J.....	1907	Augustine, A. P.....	1907
Anderson, R. M.....	1908	Austin, E. T.....	1909
Andrews, E.	1897	Aylsworth, C. B.....	1905

B.

Baldwin, F. W.....	1906	Barrett, J. H.....	1904
Bain, J. A.....	1900	Barry, W. H.....	1909
Bain, J. W.....	1896	Bartlett, E.	1908
Baker, M. H.....	1906	Bates, M. (deceased).....	1906
Ball, E. F.....	1888	Beatty, H. J.	1890
Ballantyne, H. F.....	1893	Beatty, W. G.....	1901
Banting, E. W.....	1906	Beatty, J. A.....	1903
Barber, H. G.....	1902	Beauregard, A. T.....	1894
Barber, T.	1899	Beckstedt, R. D. S.....	1909
Barber, W.	1905	Bedford, F. J.....	1908
Barber, F.	1906	Begg, W. A.....	1905
Barber, H. C.....	1908	Beith, R. E.....	1909
Barker, H. P.	1893	Bell, G. G.....	1905
Barley, J. H.....	1900	Bell, G. G.....	1908
Barrett, R. H. (deceased)...	1901	Bellisle, J. P. (deceased)....	1906

Bennett, G. A.....	1909	Brecken, P. R.....	1908
Bergey, A. E.....	1894	Brereton, W. P.....	1901
Bertram, G. M.....	1901	Breslove, J.	1903
Betts, H. H.....	1906	Brian, M. E.....	1906
Beynon, D. E.....	1906	Bristol, W. M.....	1905
Birchard, E. R.....	1909	Brodie, W. M.....	1895
Bissett, G. W.....	1906	Broughton, G. H.....	1907
Black, G. E.....	1908	Broughton, J. T.....	1901
Black, W. D.....	1909	Brown, J. M.....	1902
Blackwood, A. E.....	1895	Brown, T. W.....	1906
Blackwood, W. C.....	1906	Brown, D. B.....	1888
Blair, W. J.....	1902	Brown, G. L.....	1893
Bleakley, J. F.....	1885	Brown, L. L.....	1895
Blizard, D. C.....	1909	Brown, T. D.....	1904
Boeckh, J. C.....	1906	Brown, J. A.....	1907
Bonnell, M. B.....	1904	Brown, E. I.....	1908
Boswell, E. J.....	1895	Brown, C. E.....	1909
Boswell, M. C.....	1900	Browne, E. W.....	1909
Boulton, W. J.....	1909	Bryce, W. F. M.....	1908
Boustead, W. E. (deceased)	1890	Buchan, P. H.....	1908
Bow, J. A.....	1897	Buchanan, J. A.....	1909
Bowen, G. H.....	1909	Bucke, M. A. (deceased)	1890
Bowers, W. J. (deceased)...	1901	Buck, W. A.....	1894
Bowes, H. F.....	1908	Bunnell, A. E. K.....	1906
Bowman, H. J.....	1885	Burd, J. H.....	1903
Bowman, H. D.....	1907	Burgess, E. L.....	1903
Bowman, F. M.....	1890	Burns, D.	1883
Bowman, A. M.....	1886	Burns, J. C. (deceased).....	1887
Boyd, D. G.....	1894	Burns, J. E.....	1909
Boyd, W. H.....	1898	Burnham, F. W.....	1904
Brace, J. H.....	1908	Burnside, J. T. M.....	1899
Brady, W. S.....	1907	Burwash, L. T.....	1896
Brandon, E. T. J.....	1901	Burwash, N. A.....	1903
Brandon, H. E.....	1906	Bush, C. E.....	1907
Bray, L. T.....	1900	Byam, F. M.....	1906
Brebner, G. (deceased).....	1895		

C.

Calder, J. W.....	1904	Campbell, W. G.....	1902
Cameron, N. C.....	1904	Campbell, A. R.....	1902
Cameron, A.	1906	Campbell, R. J.	1895
Cameron, M. G.....	1909	Campbell, G. M.....	1896
Campbell, A. J.....	1904	Campbell, W. C.....	1905
Campbell, A. M.....	1904	Campbell, N. A.....	1908

Campbell, A. W.....	1906	Coates, P. C.....	1904
Campbell, J. E.....	1908	Cockburn, J. R.....	1901
Canniff, C. M.....	1888	Code, S. B.....	1904
Carey, B.	1899	Code, T. F. (deceased).....	1904
Carmichael, C.G. (deceased)	1902	Cole, W. E. (deceased).....	1908
Carpenter, H. S.....	1897	Colhoun, G. A.....	1906
Carroll, A. M.....	1908	Collett, W. C.....	1908
Carscallen, H. R.....	1908	Collinson, J. G.....	1909
Carson, W. ..R.....	1905	Coltham, G. W.....	1909
Carter, W. E. H.....	1898	Conlon, F. T.....	1902
Carroll, M. J.....	1906	Connell, C. B. B.....	1907
Caster, J. H.....	1907	Connor, H. V.....	1902
Cavell, E.	1907	Connor, A. W.....	1895
Chace, W. G.....	1901	Cooch, H. A.....	1909
Chadwick, R. E. C.....	1906	Cook, W. A. Mc.....	1906
Challen, G.	1908	Cooper, C.	1899
Challies, J. B.....	1904	Corman, W. E.....	1909
Chalmers, W. J.	1889	Corrigan, G. D. (deceased)..	1890
Chalmers, J.	1894	Corrigan, T. E.....	1905
Charlesworth, L. C.....	1893	Cory, R. Y.....	1908
Charlton, H. W.....	1897	Coulson, C. L.....	1903
Chase, A. V.....	1906	Cousins, E. L.....	1906
Chesnut, F. H.....	1908	Coulthard, R. W.....	1899
Chesnut, V. S.....	1909	Cowan, W. A.....	1904
Chewett, H. J.....	1888	Cowper, G. C.....	1907
Chilver, C. A.....	1904	Coyne, H.	1908
Chilver, H. L.....	1904	Craig, J. A.....	1899
Christie, W.	1902	Craig, S. E.....	1904
Christie, U. W.....	1904	Creighton, A. G.....	1906
Christie, A. G.....	1901	Crerar, S. R.....	1904
Chubbuck, L. B.....	1899	Crosby, N. L. R.....	1905
Clark, J.	1900	Crosby, T. H.....	1909
Clark, G. T.....	1906	Culbert, M. T.....	1902
Clark, F. F.....	1903	Culbert, J. V.....	1907
Clement, W. A.....	1889	Cumming, R.	1902
Clement, S. R. A.....	1905	Cumming, J. D.....	1908
Cline, C. G.....	1909	Cunningham, R. H.....	1909
Clothier, G. A.....	1899	Currie, W. M.....	1904

D.

Dahl, A. D.....	1908	Dann, E. M.....	1909
Dallyn, F. A.....	1909	Darling, E. H.....	1898
Daniels, W. N.....	1906	Darroch, J.	1908
Danks, F. A.....	1908	Davis, R.	1907
Danks, C. N.....	1909	Davis, A. I.	1909

Davis, H. C.....	1909	Dobie, J. S.....	1895
Davison, J. E.....	1900	Dodds, W. A.....	1909
Davison, A. E.....	1903	Doorly, H. C.....	1908
Dawson, I. H.	1909	Douglas, R. H.....	1909
Deacon, T. R.....	1891	Douglas, R. H.....	1908
Death, N. P. F.....	1906	Douglas, W. E.....	1902
DeCew, J. A.....	1896	Duff, J. A. (deceased).....	1890
Delahaye, W. H.....	1909	Duff, W. A.....	1901
Depew, H. H.....	1904	Duggan, G. H.....	1883
Derham, W. P.....	1909	Dundass, C. S.....	1906
Dickson, G. W.....	1900	Dunlop, R. J.....	1902
Dickinson, E. D.....	1900	Dunn, T. H.....	1893
Dill, C. W.....	1891	Dyer, F. C.....	1908
Dixon, H. A.....	1900		

E.

Eagleson, F. M.....	1908	Empey, J. M.....	1902
Eason, D. E.....	1901	English, A. B. (deceased)...	1890
Edwards, W. M.....	1902	Evans, S. D.....	1907
Edwards, C.	1908	Evans, S. L.....	1908
Elliott, H. P.....	1896	Ewart, J. A.....	1894
Elliott, J. C.....	1899	Ewart, F. R.....	1907
Elder, A. J.....	1904	Ewing, E. O.....	1908
Elwell, W. (deceased).....	1902		

F.

Fairbairn, J. M. R.....	1893	Forbes, D. L. H.....	1902
Fairchild, C.	1892	Ford, A. L.....	1904
Falconer, F. S.....	1909	Forester, C.	1893
Fargey, T. A.....	1909	Forman, W. E.....	1899
Fear, S. L.....	1906	Forward, E. A.....	1897
Fensom, C. J.....	1903	Forward, C. C.....	1906
Ferguson, G. H.....	1905	Foster, A. H.....	1908
Ferguson, J. B.....	1909	Francis, Walter J.....	1893
Fergusson, A. T.	1909	Francis, G. C.	1908
Fierheller, H. S.....	1905	Freeman, T. E.....	1909
Fingland, W.	1893	Frost, E. R.....	1909
Flanagan, O. L.....	1908	Fuce, E. O.....	1903
Fleck, J. G.....	1904	Fullerton, C. H.....	1900
Fleming, G. R. S.....	1907	Fux, P. C.....	1907
Flint, C.	1909		

G.

Gaby, F. A.....	1903	Graham, C. W.....	1906
Gagné, S.	1901	Graham, G. W.....	1907
Galletly, J. S.....	1907	Graham, D. A.....	1909
Galt, G.	1907	Grant, W. F.....	1898
Gardner, J. C.....	1903	Grant, R. R.....	1909
Garland, N. L. (deceased)..	1890	Grasett, C. S.....	1907
Garrow, A. B.....	1907	Grassie, C. A.....	1908
Gear, S. S.....	1908	Gray, A. T.....	1897
George, R. E.....	1903	Gray, W. W.....	1904
Gibbons, J.	1888	Gray, A.	1904
Gibson, A. E.....	1902	Gray, J. E.....	1909
Gibson, N. R.....	1901	Greene, P. W.....	1906
Gibson, W. S.....	1904	Greene, G. E. D.....	1909
Gillespie, P.	1903	Greene, W. H.....	1909
Gillies, A.	1907	Greenwood, W. K.....	1904
Glover, A. E.....	1909	Guernsey, F. W.....	1895
Goldie, A. R.....	1893	Gulley, C. L.....	1908
Gooderham, A. E.....	1909	Gunn, W. W.....	1909
Goodwin, A. C.....	1902	Gurney, W. C.....	1896
Goodwin, J. B.....	1892	Guest, W. S.....	1900
Gordon, J. P.....	1904	Guy, E.	1899
Gourlay, W. A.....	1903		

H.

Hackner, J. W.....	1908	Harris, C. J.....	1904
Hagarty, R. E. W.....	1907	Harrison, R. L.....	1906
Haight, H. V.....	1896	Harrison, F. W.	1905
Hall, K.	1907	Harrison, E.	1906
Hamer, A. T. E.....	1901	Hartney, J. C.....	1906
Hamilton, J. F.....	1903	Harvey, C.	1901
Hamilton, C. B.....	1906	Harvey, D. W.....	1909
Hamilton, C. T.....	1907	Haultain, H. E. T.....	1889
Hanly, S. C.....	1893	Haviland, F. L.....	1908
Hanes, G. S.....	1903	Hay, C. O.....	1909
Hanning, G. F.....	1889	Hayes, L. J.....	1903
Hara, L. D.....	1904	Hemphill, W.	1900
Hare, R. A.....	1907	Hemphill, J.	1909
Harcourt, F. Y.....	1903	Henderson, E. E.....	1885
Hare, W. A.....	1899	Henderson, F. D.....	1903
Harkness, A. H.....	1895	Henderson, S. E. M.....	1900
Harkness, A. L.....	1906	Henderson, C. D.....	1908
Harper, C. J.....	1909	Hendry, M. C.....	1905

Henry, J. A.....	1900	Hookway, C. W.....	1906
Henwood, C.	1902	Hopkins, R. H.....	1906
Herald, W. J.....	1894	Horton, J. A.....	1903
Hermon, E. B.....	1886	Hoshal, G. C.....	1909
Heron, J. B.....	1904	Houston, R. S.....	1906
Hertzberg, C. S. L.....	1905	Huber, W.	1906
Hett, S.	1906	Huether, D. J.....	1908
Hewson, W. G.....	1905	Huether, A. D.....	1908
Hicks, W. A. B.....	1897	Hughes, C.	1909
Hill, E. M. M.....	1904	Hull, H. S.....	1895
Hill, S. N.....	1904	Hull, A. H.....	1906
Hill, H. O.....	1907	Hunter, A. E.....	1909
Hillis, C. R.....	1906	Hunter, A. N.	1908
Hogarth, G.	1909	Hutcheon, J.	1890
Hogg, T. H.....	1907	Hutton, C. H.....	1907
Holcroft, H. S.....	1900	Hyland, H. M.....	1907
Holmes, A. E.....	1909	Hyman, E. W.....	1907
Holmes, C. R.....	1909		

I.

Iler, S. B.....	1908	Irvine, J.	1889
Ingles, C. J.....	1904	Irwin, H.	1909
Innis, W. L.....	1890	Isbister, J.	1909
Ireland, L. G.....	1907		

J.

Jackes, F. P.....	1909	Johnston, H.	1903
Jackson, J. G.....	1903	Johnston, A. C.....	1894
Jackson, F. C.....	1901	Johnston, S. M.....	1894
Jackson, W.	1907	Johnston, H. A.....	1900
Jackson, C. B.....	1907	Johnston, J. C.....	1900
Jackson, J. E.....	1909	Johnston, J. A.....	1900
James, O. S.....	1891	Johnston, C. K.....	1903
James, D. D.....	1889	Johnston, W. J.....	1909
James, E. A.....	1904	Johnston, C.	1906
James, E. W.....	1909	Johnston, C. E.....	1909
Jepson, W. C.....	1906	Johnston, J. T.....	1908
Jeffrey, D.	1882	Jones, J. E.....	1894
Jermyn, P. V.....	1904	Jones, G. S.....	1905
Job, H. E.....	1894	Jones, G. R.....	1906
Johnson, C. C.....	1909	Jones, T.	1906
Johnston, D. M.....	1902	Jupp, A. E.....	1906

K.

Kay, E. W.....	1907	Keys, W. R.....	1908
Keefe, W. S. H.....	1904	King, C. F.....	1897
Keele, J.	1893	Kinghorn, A. A.....	1907
Keffer, A. H. E.....	1909	Kirkland, W. C.....	1884
Keith, D. F.....	1907	Klingner, L. W.....	1907
Keith, H. P.....	1907	Klotz, H. N.....	1909
Kemp, J. B. O.....	1909	Knight, R. H.....	1902
Kennedy, J. H.....	1882	Kormann, J. S.....	1898
Keppy, J. D.....	1906	Kribs, G.	1905
Key, W. R.....	1909		

L.

Laidlaw, J. T.....	1893	Latornell, A. J.....	1903
Laidlaw, A.	1901	Latornell, A.	1905
Laing, W. F. (deceased)....	1896	Lavrock, J. E.....	1898
Laing, A. T.....	1892	Lawson, W.	1892
Laird, R.	1886	Lawrie, R. R. (deceased)....	1896
Lamb, F. C.....	1907	Lea, W. A. (deceased)....	1892
Lamont, A. W.....	1909	Leighton, J. W.....	1905
Lane, A. (deceased).....	1891	Lennox, A. E.....	1909
Lang, A. G.....	1903	LePan, A. D.....	1907
Lang, J. L.....	1906	Leslie, J. N. M.....	1908
Langley, C. E.....	1892	Lewis, F. C.....	1908
Langmuir, F. L.....	1902	Lindsay, J. H.....	1907
Langmuir, C. B.....	1909	Linton, A. P.....	1906
Larkworthy, W. J.		Lott, A. E.....	1887
(deceased)	1904	Loucks, R. W. E.....	1909
Laschinger, E. J.....	1892	Loudon, T. R.....	1905
Lash, F. L.....	1893	Ludgate, B. A.....	1885
Lash, N. M.....	1894	Lumbers, W. C.....	1901
Latham, R.	1899	Lynar, H. R.....	1908

Mac.

Macallum, A. F.....	1893	Mackinnon, W.	1906
MacBeth, C. (deceased)....	1896	Mackintosh, D.	1898
Macdougall, A. C.....	1901	MacIachlan, W.	1906
Macfarlane, E. D.....	1909	MacLachlan, W. A.....	1909
Mackay, A. G.....	1907	MacLean, B. A.....	1909
MacKay, J. T.....	1902	MacLeod, G.	1907
MacKenzie, K. A.....	1906	MacMillan, G.	1901
Mackinnon, J. G.....	1909	Macpherson, N. W.....	1909

Mc.

McAllister, J. E.....	1891	McIlwraith, D. G.	1906
McAllister, A. L.....	1893	McIntosh, A. H.	1907
McAree, J. (deceased).....	1882	McKay, O.	1885
McArthur, R. E.....	1900	McKay, C. (deceased).....	1904
McArthur, A. S.....	1909	McKay, W. N.	1895
McAuslan, H. J.....	1903	McKechnie, F. H.	1909
McBride, A. H.....	1902	McKenzie, D. W.	1905
McCollum, C. R.....	1909	McKenzie, J. A.	1906
McConnell, A. W.....	1906	McKinnon, H. L.	1895
McCordick, A. S.....	1909	McLean, C. A.	1905
McCuaig, O. B.....	1904	McLean, W. N.	1905
McCuaig, P. J.....	1909	McLean, L. A. (deceased)...	1908
McCulloch, A. L.....	1887	McLennan, A. L.	1902
McCurdy, J. A. D.....	1907	McLeod, G.	1909
McDougall, J. (deceased) ...	1884	McMaster, A. T. C.	1901
McDowall, R.	1888	McMaster, W. A. A.	1908
McEntee, B.	1892	McMillan, J. G.	1900
McEwen, G. G.	1904	McMillan, D.	1904
McFarlen, G. W.	1888	McMillan, V.	1909
McFarlen, T. J.	1893	McMordie, H. C.	1908
McFarlane, J. A.	1903	McMurchy, J. A.	1896
McFarlane, W. G.	1904	McNab, J. V.	1906
McFarlane, J. B.	1907	McNaughton, A. L.	1903
McGeorge, W. G.	1908	McNaughton, F. W.	1898
McGibbon, C. P.	1904	McNeill, F. W.	1907
McGorman, S. E.	1906	McPherson, A. J.	1893
McGowan, J.	1895	McPherson, J. A.	1906
McGregor, W. W. (deceased)	1905	McQuarrie, M. K.	1907
McGregor, J. M.	1908	McRoberts, A. A.	1908
McGugan, D. J.	1907	McTaggart, A. L.	1894
		McVean, H. G.	1901

M.

Mace, F. G.	1905	Marani, C. J.	1888
Madden, J. F. S.	1902	Marani, V. G.	1893
Madge, N. G.	1908	Marlatt, K. D.	1908
Main, W. T.	1893	Marriott, F. G.	1903
Malcolmson, W. S.	1907	Marrs, C. H.	1902
Malone, J. E.	1908	Marrs, D. W.	1906
Manning, N. H.	1909	Marshall, R. J.	1908
Manson, G. J.	1904	Marshall, S. A.	1907
Manson, A. B.	1909	Martin, F.	1887

Martin, T.	1896	Molesworth, G. N.	1907
Martindale, E. S.	1909	Molesworth, J. C. P. (de-	
Martyn, O. W.	1909	ceased)	1908
Mason, D. H. C.	1907	Monds, W.	1899
Matheson, W. C.	1901	Monk, E. D.	1908
Mathison, P.	1902	Moody, F. H.	1908
Maus, C. A.	1903	Montague, F. F.	1906
Maxwell, W. A.	1906	Montgomery, R. H.	1903
Maynard, H. V.	1907	Moore, H. H.	1902
Meadows, W. W.	1895	Moore, E. E.	1904
Melson, J. W.	1907	Moore, J. H.	1888
Menzies, J. M.	1906	Moore, J. E. A.	1891
Mennie, R. S.	1902	Moore, F. A.	1903
Merrill, E. B.	1890	Moore, W. J.	1906
Middleton, H. T.	1901	Moore, J. M.	1907
Mickle, G. R.	1888	Moorhouse, W. N.	1904
Mills, G. G.	1907	Morden, L. W.	1905
Minns, J. B.	1907	Morice, J. H.	1908
Minty, W.	1894	Morley, P. F.	1907
Mill, F. X. (deceased).....	1889	Morris, J. L.	1881
Miller, L. Haun.	1900	Morris C. A.	1909
Miller, M. L.	1903	Morton, G.	1909
Miller, L. R.	1906	Mowbray, F. E. H.	1908
Milligan, G. L.	1908	Mullins, E. E.	1903
Milne, C. G. (deceased).....	1892	Munro, W. H.	1904
Mines, W.	1893	Munro, G. R.	1905
Mitchell, P. H.	1893	Munro, F. V.	1909
Mitchell, C. H.	1892	Murdock, C. R.	1906
Mitchell, B. F.	1906	Murphy, C. J.	1906
Mitchell, A. B.	1908	Murray, E. W.	1907
Moberley, H. K.	1889	Murray, J. D.	1907
Moffatt, R. W.	1905	Murray, W. P.	1906

N.

Nash, T. S.	1902	Neville, E. A.	1909
Near, W. P.	1906	Nevitt, I. H.	1903
Neelands, E. V.	1900	Newman, W.	1891
Neelands, E. W.	1907	Newton, J.	1909
Neelands, R. E. K.	1907	Nicholson, C. J.	1894
Neelands, R.	1906	Nicklin, W. G.	1905
Neilly, B.	1907	Nourse, A. E.	1907

O.

O'Brien, E. D.	1905	O'Hearn, J. J.	1909
Odell, L. S.	1909	Oliver, E. W.	1903
O'Donnell, V. J.	1909	Oliver, J. P.	1903
O'Grady, W. deC.	1908	O'Sullivan, J. J.	1907

P.

Pace, J. D.	1903	Pickering, A. E.	1904
Pace, G.	1904	Pigott, R. B.	1909
Pae, A. W.	1909	Pinhey, C. H.	1887
Pardoe, W. S.	1904	Pinkney, D. H.	1903
Paris, J.	1904	Pivnick, M.	1908
Park, D. G.	1906	Playfair, N. L.	1892
Parke, J.	1904	Phillips, E. P. A.	1905
Parsons, J. L. R.	1901	Plunkett, T. H.	1903
Paterson, G. W.	1906	Pope, A. S. H.	1899
Paton, T. K.	1907	Porte, W. B.	1906
Patten, B. B.	1903	Porter, C. J.	1909
Patten, B. B.	1905	Potter, R. B.	1907
Patterson, J.	1899	Powell, G. G.	1902
Paulin, F. W.	1907	Power, G. H.	1901
Peaker, W. J.	1904	Prentice, J. M. (deceased)	1892
Peckover, H. J.	1908	Price, H. W.	1901
Pedder, J. R. (deceased) ...	1890	Prochnow, F. E.	1907
Pequegnat, M.	1908	Proctor, E. M.	1908
Petry, A. M.	1909	Procunier, J. F.	1907
Pettingill, R. E.	1906	Proudfoot, H. W. (deceased)	1897
Philp, D. H.	1903	Publow, C. F.	1908
Philips, E. H.	1900	Pullen, E. F.	1905
Phillips, H. G.	1908	Purser, R. C.	1906

Q.

Quail, J.	1909	Quance, G. E.	1907
----------------	------	--------------------	------

R.

Raine, H.	1907	Raymond, D. C.	1904
Ramsey, G. L.	1905	Redfern, W. B.	1908
Ramsperger, A. F.	1909	Redfern, C. R.	1909
Rannie, J. L.	1907	Reid, F. B.	1904
Ransom, J. T.	1908	Revell, G. E.	1899
Ratz, W. F. (deceased)...	1902	Richards, E.	1899
Raymer, A. R.	1884	Richardson, G. H.	1888
Rayner, G. W.	1905	Richardson, C. W. B.	1907

Riddell, M. R.	1904	Rose, R. R.	1908
Ridler, A. A.	1907	Rosebrugh, T. R.	1889
Roaf, J. R.	1900	Ross, J. A.	1892
Robertson, F. A.	1908	Ross, J. E.	1888
Robertson, H. D.	1902	Ross, D.	1908
Robertson, J.	1884	Ross, R. A.	1890
Robertson, J. M.	1893	Ross, K. G.	1906
Robertson, N. R.	1906	Ross, R. B.	1905
Robertson, A. R.	1908	Ross, R. C.	1906
Robertson, D. F.	1903	Rothwell, T. E.	1905
Robinson, J. (deceased) ...	1891	Rothwell, H. E.	1907
Robinson, F. J.	1895	Roxburgh, G. S.	1904
Robinson, A. H. A.	1897	Rounthwaite, C. H. E.	1900
Robinson, W. A.	1908	Routly, H. T.	1906
Robinson, R. C.	1908	Russell, W. B.	1891
Rogers, J.	1887	Russel, R.	1893
Rogers, C. H.	1906	Rust, H. P.	1901
Rogers, L. J.	1908	Rutherford, F. N.	1904
Rolph, H.	1894	Rutledge, L. T.	1909
Rolfson, O.	1906	Ryckman, J. H.	1906
Rose, K.	1888		

S.

Sanders, W. K.	1906	Shaw, J. H.	1898
Sanderson, A. U.	1909	Shaw, W. E. V.	1908
Sara, R. A.	1909	Shaw, M. R.	1909
Sauer, M. V.	1901	Shearer, H. F.	1908
Saunders, G. A.	1899	Sheply, J. D.	1904
Saunders, H. W.	1900	Sheppard, A. C. T.	1907
Scheibe, R. R.	1896	Shields, J. D.	1894
Scheibe, H. M.	1903	Shipley, A. E.	1898
Schlarbaum, A.	1909	Shirriff, C. H.	1905
Schofield, C. A.	1907	Silvester, G. E.	1891
Schwenger, C. E.	1909	Sinclair, D. (deceased)....	1902
Scott, C. A.	1909	Sisson, C. E.	1905
Scott, G. S.	1905	Slater, F. W.	1904
Scott, W. A.	1906	Smallpiece, F. C.	1898
Scott, W. F.	1897	Smart, R. S.	1904
Secord, A. O.	1908	Smiley, R. W.	1897
Sedgwick, A.	1909	Smith, A. N.	1892
Segré, B. H.	1909	Smith, A.	1894
Seibert, F. V.	1909	Smith, H. G. (deceased)...	1903
Serson, H. V.	1905	Smith, R. W.	1898
Seymour, H. L.	1903	Smith, J. H.	1903
Shanks, T.	1899	Smith, D. A.	1904

Smith, F. R.	1907	Stiver, J. L.	1907
Smithers, W. J.	1904	Stock, J. J.	1908
Smithrim, E. R.	1907	Stock, P. H.	1909
Snaith, W.	1907	St. Lawrence, J.	1908
Sparling, M. W.	1909	Stocking, F. T.	1895
Speller, F. N.	1893	Street, J. C.	1909
Spencer, A. C.	1907	Stroud, S.	1909
Spotton, A. K.	1894	Stuart, H. B.	1908
Squire, R. H.	1893	Stuart, J. L. G.	1908
Stamford, W. L.	1908	Stubbs, W. F.	1905
Starr, R. H.	1908	Stull, W. W.	1897
Stayner, D. S.	1909	Sturdy, N. H.	1905
Steel, I. J.	1902	Summers, G. F.	1907
Stern, E. W.	1884	Sutcliffe, H. W.	1907
Stevenson, W. H.	1901	Sutherland, W. H.	1902
Stewart, J. A.	1898	Sutherland, C. C.	1909
Stewart, D. L. N.	1905	Swan, W. G.	1905
Stewart, M. A.	1905	Swan, R. G.	1909
Stewart, W. M.	1906	Sword, A. D.	1908
Stewart, G. S.	1907	Sword, A. D.	1909
Stewart, A. W. J.	1908	Sykes, F. H.	1905
Stewart, N. C.	1909	Symmes, H. D.	1891
Stiles, J. A.	1907		

T.

Tate, H. W.	1909	Thornley, J. H.	1908
Taylor, T.	1902	Thorold, F. W.	1900
Taylor, W. V.	1893	Tillson, E. D.	1905
Taylor, A.	1900	Tipper, G. A.	1909
Taylor, J. W. R.	1908	Toms, C. G.	1908
Taylor, W. E.	1908	Townsend, C. J.	1904
Teasdale, C. M.	1902	Townsend, D. T.	1904
Tennant, D. C.	1899	Traill, J. J.	1905
Tennant, W. C. (deceased)	1900	Treadgold, W. M.	1905
Thomas, V. C.	1908	Trees, S. L.	1903
Thompson, P. M.	1907	Trees, A. G.	1909
Thompson, E. A.	1909	Tremaine, R. C. C. (dec'd)	1895
Thomson, T. K.	1886	Trimble, A. V.	1904
Thomson, R. W.	1892	Tucker, B. B.	1904
Thomson, S. E.	1904	Turnbull, W. G.	1909
Thomson, L. R.	1905	Turner, W. E.	1905
Thomson, J. E.	1906	Tye, H. W.	1908
Thomson, O. R.	1907	Tyrrell, J. W.	1883
Thomson, L. R.	1907	Tyrrell, H. G.	1886
Thorne, S. M.	1900		

U.

Umbach, J. E.	1903	Uren, A. E.	1905
Underwood, J. E.	1909		

V.

VanEvery, W. W.	1899	Vaughan, J. M.	1905
VanNorman, C. P.	1908	Vercoe, H. L.	1898
VanNorman, C. P.	1909	Vickery, C. L.	1906
VanNostrand, J.	1909	Villeneuve, T. L.	1908
Vatcher, A.	1909		

W.

Wade, E.	1904	Whitelaw, A. R.	1909
Wagner, W. E.	1899	Wickett, T.	1889
Wagner, H. L.	1905	Wiggins, T. H.	1890
Waldron, J.	1903	Wilkes, E. D.	1907
Walker, E. W.	1904	Wilkinson, T. A.	1898
Walker, W. J.	1907	Wilkinson, R. G.	1909
Walker, C. M.	1909	Williams, C. G.	1903
Wanless, A. A.	1902	Williams, J. A. McK.	1909
Wass, S. B.	1903	Williamson, O. T. G.	1909
Watson, R. B.	1893	Williamson, D. A.	1898
Watson, J. P.	1904	Wilson, R. D.	1901
Watt, G. H.	1899	Wilson, N. D.	1903
Waugh, B.	1908	Wilson, J. N.	1906
Webb, C. E.	1909	Wilson, A. F.	1907
Webb, E. E.	1909	Wilson, F. D.	1908
Wedlake, R. M.	1908	Wilson, J. M.	1908
Weekes, M. B.	1897	Wilson, L. R.	1909
Weir, H. M.	1900	Wilson, F. F.	1909
Weir, J. M.	1904	Wing, D. O.	1908
Weldon, E. A.	1897	Withrow, W. J.	1890
Wells, A. F.	1904	Withrow, F. D.	1900
West, A. M.	1908	Wood, E. M.	1906
Whelihan, J. A.	1903	Woods, M. H.	1907
White, A. V.	1892	Wookey, S. A.	1900
White, H. F.	1903	Worthington, W. R.	1904
White, W. R.	1908	Wright, C. H. C.	1888
White, W. J.	1908	Wright, R. T.	1894
White, F. C.	1909	Wright, W. F.	1904

Y.

Yeates, E.	1899	Young, W. H.	1905
Young, C. R.	1903	Young, R.	1908

Z.

Zahn, H. J.	1902	Zimmer, A. R.	1907
------------------	------	--------------------	------



